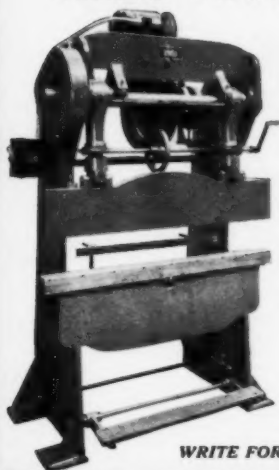


Hitchcock's Machine Tool Blue Book

JULY, 1934

TWENTY-NINTH YEAR

IMPROVED Verson ALLSTEEL Junior Power Press Brake



A light, powerful machine, especially designed for the rapid, economical production of sheet metal parts such as are used in the manufacture of air conditioners, refrigerators, cabinets of all sorts, kitchen equipment, store fixtures, metal furniture, etc., etc.

This Verson press is rigid, compact and unbreakable, very simple to operate. Of great value in producing small parts in quantities, or to cut down production costs by relieving big machines in doing odd jobs. It is easily portable.

Verson Allsteel Brakes are made in all sizes and capacities. Front View of the No. 1038 is shown herewith.

WRITE FOR DESCRIPTIVE CIRCULAR.

The Allsteel Press Company, Inc.

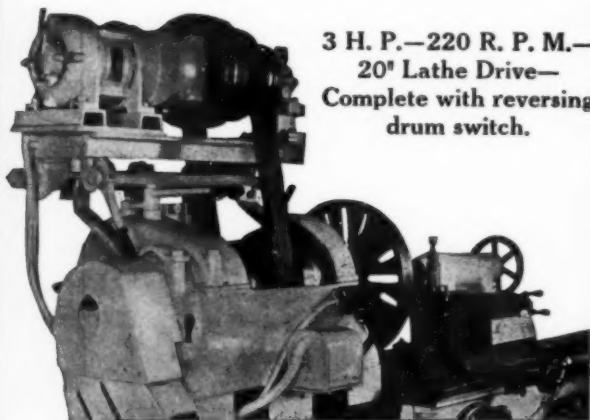
Originators of Allsteel Punch Presses

12015 So. Peoria St.,

CHICAGO, ILLINOIS

PUBLISHED AT 508 So. DEARBORN ST. CHICAGO

Machine Tool Motorization



3 H. P.—220 R. P. M.—
20" Lathe Drive—
Complete with reversing
drum switch.

Modernize your cone pulley machines by the addition of one of these sturdy drives. Easy to attach—4 bolts and a short belt making your machine ready for heavy production. Complete drives available for a wide range of machines.

WRITE FOR DATA

THE PRODUCTION EQUIPMENT CO.

5213 Chester Ave.,

CLEVELAND, OHIO

Hitchcock's Machine Tool Blue Book

**Selected
Circulation**

**20,000
Monthly**

JULY, 1934

TWENTY-NINTH YEAR

Quality Circulation



Until recently the large machinery publications swore by their subscription lists. They looked upon free circulation with exceeding disfavor.

Now they are turning more and more to free distribution to give their advertisers a better coverage of the best buyers.

For the last half of 1933 the largest monthly in the machine tool field reported an average of only 8,803 paid circulation out of a total distribution of 14,034.

For the same period the leading trade paper in the wood-working field reported an average of only 3,078 paid circulation out of a total distribution of 6,019.

Gradually it is becoming recognized that free distribution, when handled right, affords the only method of thoroughly covering the best buyers.

And the publishers of the "Blue Book" have been working on the distribution problem so long—nearly 30 years—that by this time they believe they know how to give to its advertisers a **QUALITY** circulation unsurpassed in its buying power.

QUANTITY, QUALITY and **MODERATE RATE** form an unbeatable trinity for manufacturers who wish to make their products known to *the best trade the country over.*

Published By

Hitchcock Publishing Co.

508 S. Dearborn St.,

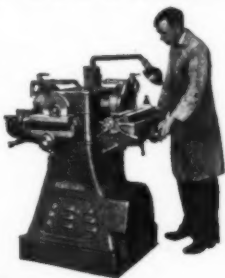
Chicago, Ill.

Consult the Classified Finding Index for your requirements

SUNDSTRAND

3-Wheel Tool Grinder

A big, powerful, convenient machine for grinding and honing accurate, smooth, keen edges on cutting tools. Made in three types (a) for tungsten carbides (b) for high speed steels, (c) for tungsten carbides and steels. Speeds up tool-sharpening, improves cutting, lengthens tool life.



BENCH CENTERS



BALANCING TOOLS

Made in 5 sizes, with capacities from 800 lbs. to 24,000 lbs. Others for propellers, flywheels, pulleys, etc.

Accurate, compact, portable.
Adjustable heads. Quick-
acting spindle. Seven sizes.



These Sundstrand tools, like our Lathes and Milling Machines, cut costs and make work easier. " " "
INVESTIGATE! Address our Dept. H for details.

FOOTBURT



A Single Spindle Footburt Sipp Sensitive Drill

**Made in three
sizes of single
and multiple
spindle models**

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

Instant grip and let-go. No slipping. You can't lock it on a pipe.

Replaceable heel jaw of chrome molybdenum nickel alloy steel.

Handle and housing of new Super-X Alloy Metal—double the old **RIDGID** strength.



Hook jaw of chrome molybdenum nickel alloy steel.

Full-floating hook jaw has handy accurate pipe scale.

We guarantee you can't break or distort this housing.

Adjusting nut spins freely in all sizes, 6" to 60".

HEAVY-DUTY

YOU don't have to buy a special **RIDGID** Wrench to get an extra powerful tool. All **RIDGIDS** are heavy-duty.

The new **RIDGID** is twice as strong as the old model that won a great reputation for strength. The new Super-X Metal has the advantages of both malleable and steel. It simply doubles the strength and power of this unusual wrench.

For strength and safety, buy **RIDGID**. And you get a lot of other satisfactions no other tool gives you, besides.

Ask your Jobber

The Ridge Tool Co., Elyria, O., U. S. A.

RIDGID

PIPE TOOLS



WHEN YOU COME TO THE 1934 CHICAGO WORLD'S FAIR

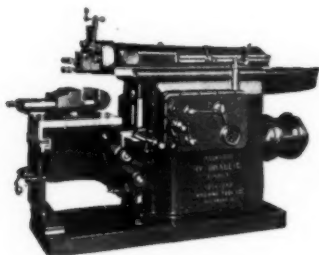
Get acquainted with the following *Chicago Manufacturers and Dealers*, who are advertisers in this publication. They will be glad to welcome you. They are in position to supply your present and future requirements in Machine Tools and allied shop equipment to your mutual advantage.

MANUFACTURERS

Acme Industrial Co.,	419 N. Carpenter St.
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Armstrong Bros. Tool Co.,	308 N. Francisco Ave.
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Up-To-Date Machine Works,	2900 S. Wabash Ave.
Witteck Mfg. Co.,	4309 W. 24th Place.

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E. L. Essley Machinery Co.,	825 Rees St.
Hill-Clarke Machinery Co.,	645 Washington Blvd.
Interstate Machinery Co.,	130 S. Clinton St.
Midwest Equipment Co.,	628 W. Lake St.
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A. D. White Machinery Co.,	108 N. Jefferson St.
Wolnick Machinery Sales,	21st & Marshall Blvd.



Rockford Hy-Draulic Shaper

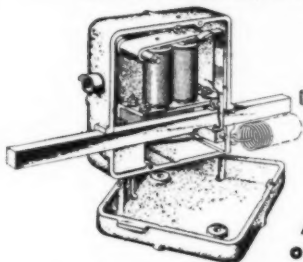
The Rockford Machine Tool Co. of 2406 Kishwaukee St., Rockford, Illinois, announces the new Hy-Draulic Shaper illustrated above. Pioneers in the application of hydraulic power to the table drive and feeds of their Hy-Draulic Shaper-Planer, this company introduced to the trade in 1931 what is believed to be the first hydraulic shaper ever offered for commercial service. This machine provided substantial advantages over mechanical drive shapers. It removed more metal per minute, with less power, and longer tool life. It had built-in rapid traverses to the table in both directions, higher ram-return speed, and many new operating conveniences.

The new Rockford Hy-Draulic Shaper, shown above, is new throughout. It retains all the advantages of the earlier model together with substantial improvements and new features which, it is claimed, will improve both the quality and quantity of the work machined. In this machine the ram-drive, feeds, and rapid traverses are all secured by the application of hydraulic power directly to ram, rail, and table. Any desired ram speed, within the ranges provided, can be secured instantly by adjusting two levers. An infinite number of feeds between zero and maximum may be selected merely by turning a dial. The five levers, and the feed selector dial, are all grouped in a panel on the operator's side of the machine, thus providing sensitive finger-tip control most conveniently. Ram stroke and position can be adjusted instantly without the use of tools while the machine is running. An easy movement of a single lever clamps or unlocks the rail and a similar convenient arrangement is provided for the table support. Another new feature of this machine, which assists materially in improving the quality and quantity of work produced, is the micrometer stop for the cross feed. This device may be adjusted to stop the cross feed of the machine within a thousandth of an inch, after the removal of any desired amount of metal. Several of these new Rockford Hy-Draulic Shapers are now in commercial service and their performance is reported to be notably successful.

A circular just off the press contains a interesting comparison between mechanical drive shapers, which are also manufactured by the Rockford Machine Tool Co. and the hydraulic drive shaper; features and advantages of the machine illustrated above, and specifications. Copies of this circular may be secured, postpaid, by writing to the manufacturers.

SIMPLEX SAFETY STOPS

Insure Steady Production



**Protect Your
Machines**

**NEW !
Model E
At Half the Cost
of Previous Models**

AVOID

**Designing Expense
Experiments
Disappointments**

A Simplex Safety Stop will protect any number of danger points at the cost of one mechanical stop. Not only are your machines protected and their production increased, but the quality of their product will be improved. 25 years of experience in this line is at your disposal. Our accumulation of data and designs will save you much costly experimentation.

In use for years on machinery for:

**Book Binding
Packaging
Bottling
Textile Spinning
Blanking & Forming
Etc., Etc., Etc.**

Guards against:

**Any Irregularity
Out of Tolerance
End of Work
Jams
Mis-Feeds
Etc., Etc., Etc.**

No interference with machine's normal operation.

Rugged. Simple. Powerful. Completely equipped with knock-off bar, cross link and spring. Operated from lighting circuit. Simple to Install—Easy to Maintain.

Send today for prices and booklet illustrating many applications, wiring diagrams, methods of mounting, etc.

THE ATLANTIC COMPANY
CHAPPAQUA, N. Y.

-:-

-:-

Aluminum Cans to Replace Tin Cans

The recent reported Caldwell resolution, adopted June 15 by the House at Washington, ordering investigation of the source of tin supply, attracts attention again to the concern felt by the Government regarding the importance of the American supply of tin. England was the original home of tin and although its mines of Cornwall are now nearly exhausted, it still controls the tin markets of the world, and heretofore has made its own prices and terms to the American buyer.

The United States imports practically half of the entire world production of tin. Rich as our Country is in the variety and the abundance of its natural resources, it lacks tin. Its production of primary tin is negligible; therefore, although being the largest consumer of tin, we must haul our tin over the seas before we can use it in our industries. While we have no tin mines in this country, we do have an enormous tinplate industry. Tin is a most useful metal in the affairs of the world and care in its use is advisable.

The electro-plating of tin mill black iron sheets with aluminum, which has been successfully achieved by the Major Engineering Corporation of Chicago, will greatly lessen the use of tin.

Aluminum plated sheets cost less than tin plate, process perfectly on standard can making machinery and solder same as tin cans. The aluminum has a peculiar affinity for steel which causes the plated coat to form an alloyed union with the steel surface, which tin does not do, and the aluminum plated sheets will take the place of tin plate for various purposes. There are countless uses for aluminum coated sheets and cans and shortly, when they are on the market, a real conservation of tin will begin; because tin will no longer be in demand for a large number of products in which it is now used, and also these aluminum electro-plated sheets will tend toward freeing the consumers from dependence on a commodity which has the double unpopularity of being imported, and controlled by outside interests.

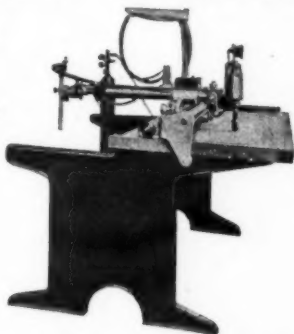
Fortunately there is no lack of aluminum in America, as it is the base of all clay.

The HANCOCK OXYCOP

Cuts Steel Quicker—At Less Cost!

Here's How!

**Speedy Cutting
Economical Operation
Low Upkeep
Accurate Cutting
Wide Range
Uses City Gas
Easy to Operate
Pays for Itself
in Very Short Time**



Why Take 5 Hours if 5 Minutes Will Do It?

DIES, jigs, fixtures, etc., usually drilled and finished on a shaper can be done with the Simplex Oxy-cop in a few minutes—instead of hours. Actual time studies show that jobs done by conventional methods and requiring 85 hours to complete were cut on the Oxy-cop in *less than 6 hours*. Cuts when complete are clean and smooth, unless a finished surface is desired, no machining is necessary. Steel cut this way does not carbonize.

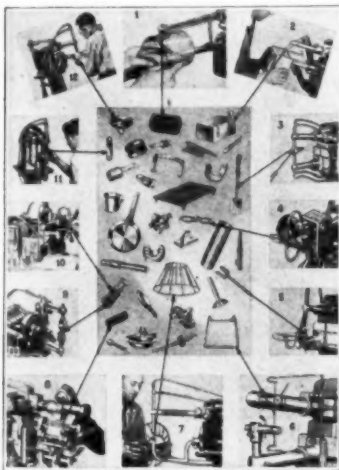
Every Tool Room Can Use It

Just as Chrysler, Ford, General Motors, Timken-Detroit Axle and other manufacturers are taking advantage of its economical operation, accuracy and low upkeep. If you wish to materially reduce your costs it will pay you to investigate the Hancock Oxy-cop. 3 sizes—No. 1, illustrated above, has cutting capacity of 24"x18"; No. 2, 36"x24" and No. 3, 60"x40". Every machine backed by our guarantee.

*Write for Illustrated Catalog Giving Complete Information,
Including Interesting Tables of Cutting Time.*

BRADLEY MACHINERY CO.
6500 Epworth Blvd., **Detroit, Mich.**

Eisler Engineering Expands Line of Welders



Electric spot welding is finding its way into practically all industries which involve the assembling or joining of metal parts, and through its adoption these industries have realized remarkable savings.

The Eisler Engineering Company of 761 South Thirteenth Street, Newark, N. J., have recently expanded their line of foot operated and motor driven electric spot and butt welders to meet the rapidly enlarging field of welding operation, including portable welders for work which cannot be carried to the machines.

In addition to their popular line of welders which range from $\frac{1}{2}$ to 100 K. V. A. and are capable of welding combined thicknesses of metals from .001" to $\frac{3}{4}$ ", they have added a number of new types of wire welders. These have been designed especially for butt welding wire and are used considerably in wire drawing plants and for manufacturing various wire novelties of all kinds, brass, bronze, copper or any other round or square rod and wire. When furnished mounted on movable pedestals they may be easily transported about the plant. Special annealing and quick pressure adjustment devices have resulted in their high operating efficiency.

A new dental soldering machine, also recently introduced, has met with great favor in the dental field.

A few of the thousands of articles that may be assembled with Eisler Engineering spot welders are shown in the illustration.

KRW Hydraulic and Sensitive ARBOR PRESSES

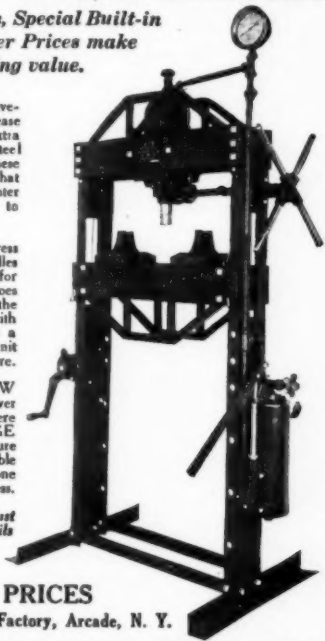
New Improvements, Special Built-in Features and Lower Prices make them an outstanding value.

THE last word in convenience, efficiency and ease of operation. Built extra strong and well braced, with steel trusses electrically welded, these presses will withstand strains that would cause presses of lighter and inferior construction to buckle or collapse.

Hand wheel for sensitive press operations has sliding handles which pull out to the ends for increased leverage. Work does not have to be changed from the work table as is the case with other make presses having a separate sensitive press unit mounted on the side or elsewhere.

The importance of this KRW feature as a time and labor saver can be appreciated. Also there is **NO EXTRA CHARGE** for this important built-in feature on a KRW Press. Work table can be raised easily with one hand. A strictly one-man Press.

Write for special circular, just off the press, giving full details and specifications of all KRW Arbor Presses.



PRICES

F. O. B. Factory, Arcade, N. Y.

- | | |
|---|----------|
| No. 37—35 ton Hydraulic and Sensitive Arbor Press (hand operated) | \$128.00 |
| No. 37B—35 ton Hydraulic and Sensitive Arbor Press (air-oil operated) | 128.00 |
| No. 37E—50 ton Hydraulic and Sensitive Arbor Press (hand operated) | 150.00 |
| (Can also be furnished in air-oil operated at same price) | |
| No. 37F—70 ton Hydraulic and Sensitive Arbor Press (hand oper. only) | 275.00 |
| Gauge and fittings, \$15.00 extra on all presses. | |

K. R. WILSON

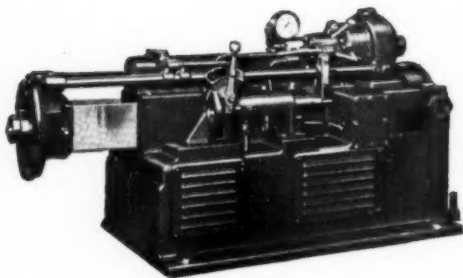
10-16 Lock Street, Buffalo, N. Y., U. S. A.

EXPORT DEPARTMENT

90 West St., New York, N. Y.

WEST COAST BRANCH

722 Mateo St., Los Angeles



Barnes Square Ram Hydraulic Drill Unit

Shown above is a new Drill Unit manufactured by the W. F. & John Barnes Co. of 303 South Water St., Rockford, Illinois. A notable feature of this Unit is the large square ram which provides ample support for the machine spindle, has an integral flange for mounting multiple spindle heads, and cannot twist or turn. The ram is machined to a very close sliding fit throughout its entire length and is actuated by hydraulic power which provides an automatic cycle including rapid approach, feed at any desired rate up to machine capacity; dwell, if desired; rapid return, and automatic stop or repeat. A high pressure variable pump provides oil for feeding the ram and a second pump provides oil at a lower pressure in large volume for rapid traversing. Both pumps are manufactured by the W. F. & John Barnes Co. especially for machine tool actuation. They are connected by a minimum of piping, without by-passes, in a closed hydraulic circuit from which air is entirely eliminated. This arrangement is said to maintain an absolutely constant ratio between the feed rate and the speed of the cutting tool under all operating conditions; to eliminate chatter of tools, stuttering slides, and sticking valves. The manufacturers claim that the life of the oil in the circuit is prolonged and that its temperature remains close to that of the surrounding atmosphere even in extremely heavy service. A socket is provided in the spindle nose for driving a single cutting tool or a multiple spindle head bolted to the integral flange on the ram. Capacity, any operation or group of operations require 5 H. P. or less.

The Barnes Square Ram Hydraulic Drill Unit is a complete, compact, powerful, self-contained machine-tool unit for drilling, boring, reaming, milling, and similar operations. It can be operated in any desired position or at any angle. It can be mounted on existing machines in many instances. It is available for installation in designs developed by other manufacturers, as well as machine tools designed by the W. F. & John Barnes Co.

Interesting information about hydraulic feeds, features and advantages of the Square Ram Hydraulic Drill Unit, specifications and installation data are contained in circular H. U. 434 which may be obtained without charge from the W. F. & John Barnes Co.

The Grant NOISELESS RIVET Spinning Machine

the PIONEER of its type—built and constantly improved over a period of more than twenty-five years—produces highly polished heads, without hammer or tool marks, at a rate of a RIVET a SECOND.

Also built in Vertical and Horizontal Multiple Spindle Types.

Send us samples and be convinced of its superior qualities.

For work in hard-to-get-at-places, we build Hammer type Machines.

Write for Literature—and don't forget to send that sample!

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.



MENDES QUALITY DIAMONDS

Always Sharp

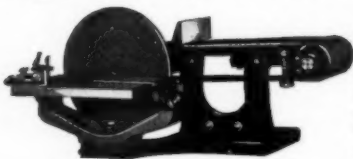
**Reduce Grinding
Costs**

Folder B on Request

Mendes Cutting Factories, Inc.
DIAMONDS AND DIAMOND TOOLS
505 Fifth Avenue, New York, N. Y.

Rep.: Milwaukee, Indianapolis, Cincinnati,
Pittsburgh, Baltimore.

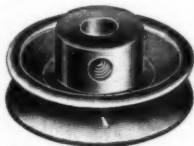
High Quality Abrasive Grinder



This abrasive band grinder is of high grade, sturdy construction, and guaranteed to be as represented; length of Band Grinder 15 in. Length

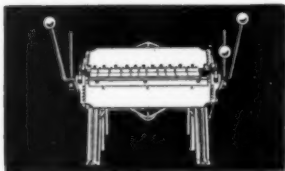
overall, 19 in.; price as shown, \$26.50 with 3 abrasive belts. Abrasive band grinder without disc and table, \$18.50. Your money refunded if not satisfied.

STEEL PULLEYS—Rolled edge "A" groove, sizes $1\frac{3}{4}$ in. to $15\frac{1}{2}$ in., O. D. "B" groove, 2 in. to 19 in. O. D. Highest quality—*write for Circular today.*



Up To Date Mach. Works
2900 S. Wabash Ave., Chicago, Ill.

Chicago Steel Brakes



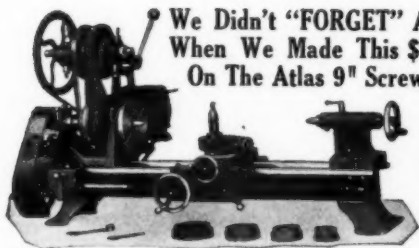
Over 30,000 in use.

Made in
all types and over 100
standard sizes.

**Box and Pan Brake Suitable for Regular Bending
or Box Work Without Change of Adjustment.**

Send For Catalog

DREIS & KRUMP MFG. CO.
7440 Loomis Blvd., CHICAGO, ILL.



We Didn't "FORGET" Anything
When We Made This \$79 Price
On The Atlas 9" Screw Cutting
Lathe



NEW ATLAS DRILL PRESSES

Built in four sizes, for all classes of work. Bench and Floor Models. More and bigger bearings. Special Atlas construction prevents side play in quill. Speeds up to 5200 R. P. M. Precision tools—Priced from \$13.95 to \$33.45



You buy a complete unit, ready to run, with self-contained countershaft and all belts.

Standard equipment includes automatic reversible feed; hollow headstock spindle; complete set of gears to cut from 4 to 72 threads per inch; thread cutting dial; compound rest graduated to 180°; six speeds with patented compound device, doing away with complicated back gears; V-belt drive—more pulling power.

Forty-five parts of Zamak Metal which has twice the strength of cast iron but is much lighter, thus doing away with useless weight. Lathe bed of heavily ribbed cast iron accurately machined and ground on very latest type of machine shop precision equipment—tested before shipment to .001" accuracy—9" swing—18" to 36" between centers. Immediate shipment. 10 days' trial with money back guarantee. Full line of tools and attachments at lowest prices. Send for free illustrated catalog. Be sure you know about the *Atlas Fully Equipped Lathe* before you order.

Atlas Press Company

1850 N. Pitcher St., Kalamazoo, Mich., U. S. A.

The Sheffield Machine & Tool Co., Dayton, Ohio, manufacturers of precision gages, have appointed the following representatives:

Homer B. (Tex) Johnson, Western Divisional Manager, 549 West Washington Blvd., Chicago. Mr. Johnson was formerly the Pratt & Whitney representative in the Chicago district.

Mr. F. P. Harrigan, appointed Sales Representative in the metropolitan area, with offices at 30 Church St., New York City.

Nicholson Expanding Mandrels



This one mandrel, the No. 4 size, will take every fractional part of an inch from 2" to 2½". It would require 32 solid mandrels to do this in 64th sizes, and intermediate sizes could not be taken. Better order a few "Nicholsons."

Write us for further information

W. H. Nicholson & Co.

117 Oregon St., Wilkes-Barre, Pa.

**BETTER-MADE
DIE SETS**

**24
DIFFERENT
STYLES**

Semi-Steel

BAUMBACH



STANDARDIZED

DIE SETS

Drop Forged Steel

**AT LOWER
COST**

**OVER
95,000
SIZES**

Send For Our New 208 Page Catalog

E. A. BAUMBACH MFG. CO.

1810 South Kilbourn Ave., CHICAGO, ILLINOIS

WELDING MACHINES

1/2 TO 100 K.V. A.

**FOOT OPERATED
MOTOR DRIVEN**

For Welding Metals
Having a Combined
Thickness from .001 in.
to .500 in.

WELDERS

As Low As

\$35.00



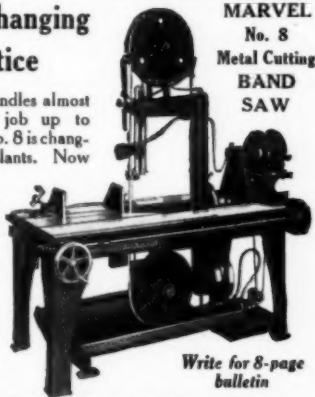
MADE IN 12 SIZES

EISLER ENGINEERING CO., Inc.
746 So. 13th St., **NEWARK, N. J.**
Distributor and Dealer Connections Desired

This Saw Is Changing Shop Practice

Because it is universal, handles almost any conceivable sawing job up to 18"x18" the **MARVEL No. 8** is changing shop practice in many plants. Now they "saw their own"; cut their own die plates, billets, beams and bars...cut out special shapes...saw out instead of mill away. With a **MARVEL No. 8** "warehouse cutting extra" can be converted to profit.

Fast, accurate and versatile, the **MARVEL No. 8** is a money maker anywhere.



**MARVEL
No. 8
Metal Cutting
BAND
SAW**

*Write for 8-page
bulletin*

ARMSTRONG-BLUM MFG. CO.

"The Hack Saw People"

341 N. Francisco Ave.,

Chicago, Illinois

A New Medart Booklet

A 42-page loose-leaf booklet termed "Data and Price List," covering in full complete and valuable engineering and purchasing information on all types of multiple and fractional horse power Medart V-Belt Drives, has been issued by The Medart Company, 3500 De Kalb Street, St. Louis, Mo.

This Booklet is for distribution to those interested enough to write for it, and a splendid acquisition to the library of Engineers, Purchasing Agents and Production Superintendents.

A New Gage Manual

The Sheffield Machine & Tool Co., Dayton, Ohio, have issued a new Sheffield Gage Manual, which is rather unique.

It is not in the form of the usual catalog, but in a loose-leaf hand book, full of information of practical value in the production of work that must be held to gaging tolerances.

This new manual will be mailed free to interested parties upon request.

A New Black & Decker Electric Drill

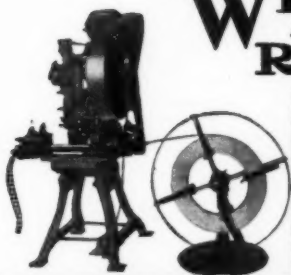
When The Black & Decker Mfg. Co., Towson, Md. introduced its new streamlined $\frac{1}{2}$ -inch Special Electric Drill last October, the reception given this new tool, they say, exceeded all expectations.

And now Black & Decker announce a companion tool—the $\frac{3}{4}$ -inch Special Electric Drill with streamline design.

In appearance and design, this new drill is in step with the modern trend toward streamlining. Its graceful lines aid balance and ease of handling; but, say the makers, beneath those graceful lines the drill packs a powerful punch.

The motor power has been increased $33\frac{1}{3}\%$ over previous models. Anti-friction bearings are used throughout, with the armature and chuck spindle mounted on ball bearings. There is also an entirely new switch handle. And with all this, the tool weighs only $5\frac{3}{4}$ pounds. It has a Universal motor, furnished for all voltages.

R. D. Black, Sales Manager, states that he fully expects this drill to be given the same enthusiastic acceptance accorded the streamlined $\frac{1}{2}$ -inch Special Drill.



WITTEK

AUTOMATIC

Roll Feeds

FOR PUNCH PRESSES

Will feed from 0" to 30" per stroke. Fits any size or make of press.

**Fast
Accurate
Automatic**

Low in first cost. No up-keep. Built with or without straightener to meet all feeding conditions.

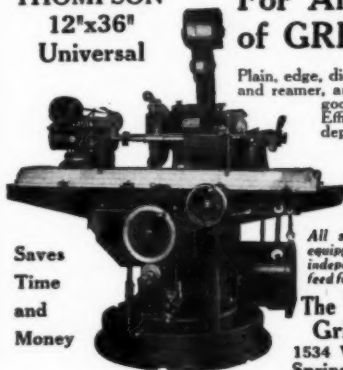
Write for Bulletin FH and free trial offer.

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12"x36"
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For All Kinds of GRINDING

Plain, edge, die, surface, cutter and reamer, and internal—and good at all of them. Efficient, accurate, dependable.

Work adjusts to a fixed grinding wheel, an exclusive feature that's better.

All standard machines equipped with auxiliary independent coarse cross feed for surface grinding.

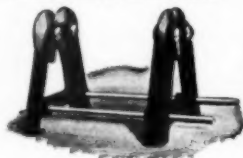
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Exceedingly Sensitive

Easy to Manipulate



Made in six sizes to balance anything that revolves from a crank shaft to a 24,000 lb. turbine rotor. They require no special leveling, no adjustment, and no centers.

Equipped with glass-hard spindles, chilled steel discs, and especially sensitive ball bearings, to give accurate, long time service.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards.	20"	30"	30"	66"	88"	20"
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With 24 Stages of Control.

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A Production Tool with as many as 24 different stages or varieties of control for regulating the depth of marking, this tool can be used for extra light marking of machinest scales, micrometers and fine tools or can be used *or extra heavy and deep* marking of rough and unfinished iron, cast iron, forgings, steel plates, etc.

Send for circular giving complete data and details of this modern instrument.



Built rugged for continuous work on the production line.

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TYPE NO. 1705

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4½ in.

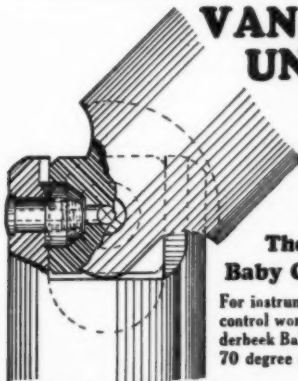
Scale length
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\$36

With 10 ft. Alloy Wire connector block and a No. 8 gauge insulated thermo couple 24" long without protection tube

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For instrument and control work. The Vanderbreek Ball Joint runs to 70 degree angle.



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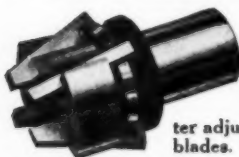
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KUTMORE Adjustable Hollow Mills

For peak production at lowest cost. With two way micrometer adjustment and long life high speed blades. *Write for catalog.*

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Surface Temperature Pyrometers

Illinois Testing Laboratories, 150 W. Austin Avenue, Chicago, have just published two new Bulletins. The No. 1726 illustrates and describes the "Alnor" Pyroll Pyrometers for measuring surface temperatures of revolving rolls or driers. The No. 1727 covers the "Alnor" Pyrocon Combination Pyrometer and Type 1755 Pyrometer for measuring surface temperatures of flat surfaces such as molds, dies, platens and other similar surfaces, either metallic or non-metallic. They describe instruments which are of great value in Steel Rolling Mills, Paper Mills, Fabric or Textile Mills, Rubber or Tire Plants, etc., etc. Copies gladly sent you on request.

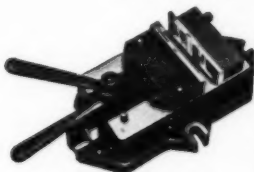
Gear Products

For those interested in the above, a copy of Catalog No. 50, just issued by the Boston Gear Works, Inc., North Quincy, Mass., seems to be nearly indispensable. This handy little volume of 240 pages is packed full of up-to-date information on this subject, and should be within easy reach of all those who have anything to do with gears, speed reducers, chain drives, etc. A copy is yours for the asking.

Hard Usage Doesn't Phase The Hartford Milling Vise

Because it was designed to "take it"—and it does! It will stand up, day after day, under the heaviest, toughest strain of production milling work. Made of the best materials, with all parts interchangeable, it will outlast four or five ordinary vises. Rapid and accurate in operation—the top eccentric handle gives tremendous binding force, while the lower cam-faced handle gives instantaneous quick-opening and return. A trial in your shop will convince you better than anything we might say.

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Jaw width 3"
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Weight 40 lbs

Also made in the swivel-jaw type with hard or soft jaws, maximum opening 2 1/4".

We also Build Machinery on a Contract Basis, Design and Develop Special Automatic Machinery—Gears and Cams Cut to Order.

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Finish Belt Surface, Crowned or Straight, from the Rough. Also Truck Treads and Curved Work.

GRINDER CHUCKS hold Abrasive Rings, 10" to 30" dia.

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Ring Wheels 12" and 18"
Table travels 16" and 24"

For Production to Tool Room

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Grinder**

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E-Z THREAD DIAL

Thread cutting on engine lathes made easy, and at lower cost. Made in four sizes. Can be easily attached to all size lathes. A reliable device that will aid the operator in the work of cutting threads. With it threads can be cut close up to shoulders as easily as the ordinary thread.



Eliminates stopping or reversing the lathe.

The many repeat orders received prove it is satisfactory after trial.

Can be shipped within two days after receipt of order.

Sent on thirty days' trial. Send for latest folder today.

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Saves 50% cost in sawing, filing and lapping on dies, gauges, tools, etc., up to 1" thick

In highest possible quality of material, precision of machining and nicety of adjustments, the "BUTTERFLY" Filing Machine is as painstaking a product as the finest watch movement—and just as reliable.

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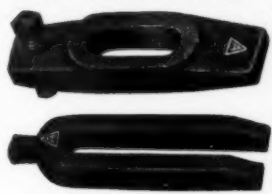
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Drop Forged Setting-Up Tools

For holding work on Planers,
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Lever Operated



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Two, Three and Fourway Valves

For operating single and double acting cylinders on equip-
ment using air, steam, oil or water up to 350 lbs. pressure.
No troublesome plugs, leather washers or packless stems
to leak, but a flat disc regrinding type that holds tight over
a long period. *Write for circulars.*

W. H. Nicholson & Company
117 Oregon Street, Wilkes-Barre, Pa.

Warner & Swasey Get Order from Japan

An order from a Japanese automobile manufacturer for 12 turret lathes was recently received by the Warner & Swasey Co., machine tool and precision instrument builders, Cleveland.

The order which calls for a variety of models, represents one of the largest single export orders which the company has received in some time.

An Example of the Antique

A striking example of the antiquity of some of the machine tools in active use was brought out in connection with an order received by the Warner & Swasey Co., Cleveland.

The mail brought a request for a part of a 14-inch turret lathe. Correspondence showed that the serial number was missing but a detailed description of the lathe was given.

Identification was finally made from old drawings in the files: the lathe was made in about 1900 and is now well over 30 years old. While no parts for machines of that age are carried in stock, one was located and shipped.

Here's a Good Sales Tip

There is no more economical way of calling on all the metal-working plants of the country than by using a page in this publication regularly to keep your name, your products and your service constantly before those who buy your goods.

The readers of these pages have a tremendous purchasing power. Make your business known to them if you have reliable products to sell.

Hitchcock Publishing Co.
508 S. Dearborn St., Chicago, Ill.

STOP Your Losses

with a Walton Tap Extractor



Remove that broken tap quickly — *without injury to the threads.*

About 90% of all taps break before they wear out. Each broken tap means stopped production, and the loss of a mechanic's valuable time. Decrease time spent on extracting broken taps and increase production. You can do it with a Walton Tap Extractor.

Made in three and four-flute styles.

A 60 day free trial will convince you

The Walton Company

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Hartford, Conn.



Strand
HIGH SPEED
ROTARY
FILES
HAND CUT



FLEXIBLE SHAFTS AND EQUIPMENT

N. A. STRAND & CO.

Send For Catalog

5001-5009 No. Lincoln St.,

Chicago, Ill.

A New Redin Drill

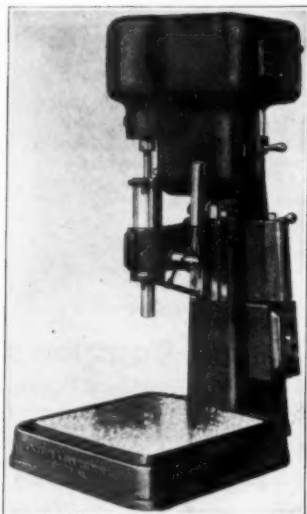


Illustration shows the new No. 200 Redin Sensitive Bench Drill, made by the A. W. Redin & Son Machine Co., Rockford, Ill.

Some of the features incorporated in this machine are: the Redin rolling wedge transmission instead of belts or gears; eight speeds, ranging from 395 to 3700 in geometrical progression; speeds easily obtainable by quick shift levers conveniently located; capacity ranging from 0 to $\frac{5}{8}$ " drill in cast iron; base with a working surface of 240 square inches, also a large and substantial bearing on which the column is securely bolted; fully

inclosed ball bearings throughout; transmission entirely enclosed; built-in two-speed $\frac{3}{4}$ h. p. motor.

This drill was primarily designed and developed to meet U. S. Navy specifications, ten of them having been built and delivered.

The careful construction of the Redin No. 200 according to above specifications insures high efficiency on all classes of drilling work within its capacity.

A New Buffalo Representative

City Machine and Tool Works, Dayton, Ohio, announce the appointment of Don F. Johnson and Company, Inc., with offices at 156 Main Street at Terrace, Buffalo, N. Y.—telephones Washington 0415-0416—as their representatives in the Buffalo district for the Cimacool-Paulins Standard Drill Jigs and Locks.



T. H. L. Punches

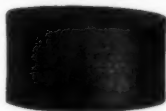
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Because they are made of the right quality of tool steel.

Because they are hardened with every care.

Because all our experience of 43 years is centered in making them accurate, rugged and dependable.

*Large stock of regular sizes
Special sizes quickly made*



T. H. Lewthwaite Machine Co.
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Outlasts a Dozen Cheaper Dressers

The "Champion" is made by experts, for long life and the best service. The only dresser that runs in an oil bearing.



The most economical dresser you can buy. Cutters are made of the best grade of tool steel, milled and heat-treated and tempered—fully guaranteed. Get the complete details on this cost saving tool.

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WITH THE NEW

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**BALL
BEARING**

**TAPPING
ATTACHMENT**

**FRICTION DRIVE
At Spindle Speed**

**FRICTION REVERSE
At Twice Spindle
Speed**

CAPACITY:

Size No. 1	{	Brass	$\frac{1}{4}$ "
		Steel	$\frac{3}{16}$ "
Size No. 2	{	Brass	$\frac{1}{2}$ "
		Steel	$\frac{5}{16}$ "

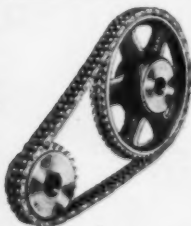
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**ONE HUNDRED
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FROM STOCK!

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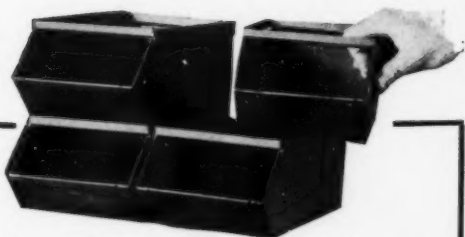
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The contents of each individual Stackbin are always accessible without disturbing the bins above or below.

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Acme Drill Jig Bushings are a standardized product, carried in stock for prompt delivery in over 6,700 standard items. They are completely finished and ready for use. The Bushings are made by the most exacting scientific methods, which insures long wear, accurate fit and absolute satisfaction. Special sizes made to order.

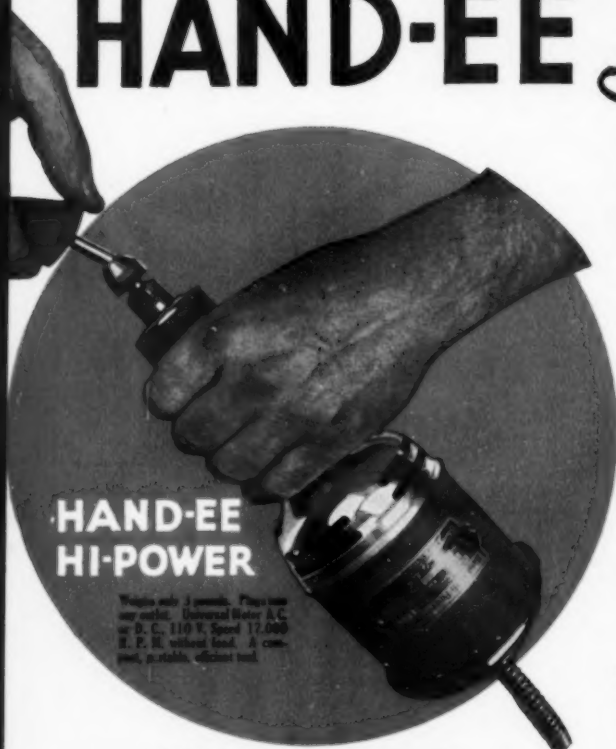
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ACME INDUSTRIAL CO.
419 N. Carpenter St., Chicago



HAND-EE



**HAND-EE
HI-POWER**

Weights only 3 pounds. Runs on
any outlet. Universal Motor A.C.
or D.C., 110 V. Speed 17,000
R. P. M. without load. A com-
pact, portable, efficient tool.

HAND-EE GRINDER PRICES

Model B—Hand-ee Hi-Power Grinder complete with 3 wheels (shapes as specified) in special container with wrenches and dressing stone **ONLY \$35.00**, f. o. b. CHICAGO. (Also for 220 or other current \$38.50).

Smaller Size Model A—Hand-ee. Weighs only 1 pound. Universal motor. Speed 13,000 R. P. M. without load. Complete with 3 wheels **ONLY \$11.50** postpaid in U. S. A.

Ask your supply house for a demonstration of Hand-ee Grinders, or accept our 5-Day trial offer by sending the coupon.

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Solves

- Grinding Problems
- Cuts Production Costs
- Speeds Up Work

A definite upping in material and labor costs is confronting most producers today. The question is—*Where can costs be cut?* The answer is—*Hand-ee Grinders with Chicago Wheels on Shanks.* Large and small industries are finding Hand-ee Grinders the most useful tools, that have come into their shops in many years. They handle a wide range of work. New and inexperienced help find them easy to use and quickly become expert. They save time as workers take Hand-ees right to the job. Lost motion is greatly reduced when Hand-ees come into the shop.

"Chicago" Grinding Wheels, Mounted on Steel Shanks, in More Than 100 Shapes

Every grinding need is efficiently handled with the wide range of shapes in all abrasives available. Permanent mounting on steel shanks is a big feature offered in Chicago Wheels. They are quickly slipped into the chuck of the Grinder and ready to go. No clumsy collars, no screws or nuts to adjust. Here's new ease and speed in production operations—in pattern, die and mold making—in sharpening taps, dies and other tools—in grinding hard-to-get-at places.

CHICAGO
WHEELS
ON
SHANKS



CHICAGO WHEEL & MFG. COMPANY, 116 S. Aberdeen St., CHICAGO, ILL.

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- ☐ Send Free Booklet. ☐ Check Enclosed. ☐ Send C. O. D.

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Made
In
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Up To
10½"

Vise

Milling Machine

Vise

Jaws open 6¾"

Plain & Swivel Base Vise

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SPRINGFIELD, OHIO

Abolish Expensive Hand Finishing

with a



Simplex-M Abrasive Band Grinder

This Grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. *Details of this and other styles and sizes on request.*

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Sundstrand Machine Tool Co., Rockford, Ill.

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Mass.

Belt Sanders, Portable Electric

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Hack Saw Blades

Armstrong-Blum Mfg. Co., 841 N. Francisco
Ave., Chicago

Classified Finding Index

Hack Saw Machines

Armstrong-Blum Mfg. Co., 341 N. Francisco
Av., Chicago

Hand Saws, Portable Electric

Skillsaw, Inc., 3317 Elston Ave., Chicago

Heads, Boring

Flynn Manufacturing Co., Detroit, Mich.

Jigs and Fixtures

American Tool Works, Inc., Hartford, Conn.
Hartford Special Mch. Co., Hartford, Conn.

Knurls and Holders, for Turrets

Graham Manufacturing Co., Providence, R.I.

Laths Drives

Collman Wheel Co., 1359 Altgeld St., Chgo.

Lathes, Bench

Atlas Press Co., Kalamazoo, Mich.

Lathes, Engine

Win. Carroll & Son, Cincinnati, Ohio

Lathes, Manufacturing

Sundstrand Machine Tool Co., Rockford, Ill.

Leader Pins, Steel

Acme Industrial Co., 419 N. Carpenter St.,
Chicago, Ill.

Machine Tool Motorization

The Production Eqpt. Co., Cleveland, O.

Mandrels, Expanding

W. H. Nicholson & Co., Wilkes-Barre, Pa.
Western Tool & Mfg. Co., Springfield, O.

Mandrels, Solid

W. H. Nicholson & Co., Wilkes-Barre, Pa.

Micrometers

Bradley Machinery Co., Detroit, Mich.

Milling Attachments

Burke Machine Tool Co., Connecticut, Ohio

Milling Machines, Bench

Burke Machine Tool Co., Connecticut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Hand

Burke Machine Tool Co., Connecticut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Plain

Burke Machine Tool Co., Connecticut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Motors, Polyphase

The Cleveland Elect. Motor Co., Cleveland,
Ohio

Pins, Leader And Dowel

Acme Industrial Co., 419 N. Carpenter St.,
Chicago, Ill.
Hambach Mfg. Co., E. A., 1812 So. E.
bourne Ave., Chicago

Pipe Cutters

Ridge Tool Co., Elvira, Ohio

Pipe Vises

Ridge Tool Co., Elvira, Ohio

Pipe Wrenches

Ridge Tool Co., Elvira, Ohio

Press Brakes

Dreis & Krump Mfg. Co., 7440 Loomis
Blvd., Chicago, Ill.

Presses, Arbor

Atlas Press Co., Kalamazoo, Mich.
W. H. Nicholson & Co., Wilkes-Barre, Pa.
Wilson, R. E., Buffalo, N. Y.

Presses, Power

Allsteel Press Co., 12015 So. Peoria Street,
Chicago, Ill.
Dreis & Krump Mfg. Co., 7440 Loomis
Blvd., Chicago, Ill.

Presses, Punch

Allsteel Press Co., 12015 So. Peoria Street,
Chicago, Ill.
Lewthwaite Mch. Co., T. H., 311 E. 47th,
New York
Dreis & Krump Mfg. Co., 7440 Loomis
Blvd., Chicago, Ill.

Pulleys, "V" Type

Up To Date Machine Works, 2900 S. Wabash
Ave., Chicago

Punch Press Feeds

Wittak Mfg. Co., 4300 W. 24th Place, Chgo.

Punch, Shear and Bender, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco
Ave., Chicago

Punches, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco
Av., Chicago
Lewthwaite Mch. Co., T. H., 311 E. 47th,
New York
Whitney Metal Tool Co., Rockford, Ill.

Punches and Dies

Lewthwaite Mch. Co., T. H., 311 E. 47th., N. Y.

Pyrometers

Illinois Testing Laboratories, Inc., 150 W.
Austin Ave., Chicago

Pyrometers, Portable & Stationary

Illinois Testing Laboratories, Inc., 150 W.
Austin Ave., Chicago, Ill.

Reamer Holders

W. H. Nicholson & Co., Wilkes-Barre, Pa.

Classified Finding Index

Rivet Spinners

Linley Brothers Co., Bridgeport, Conn.

Riveters, Multiple Spindle

Grant Mfg. & Mchs. Co., Bridgeport, Conn.

Riveters, Pneumatic

Grant Mfg. & Mchs. Co., Bridgeport, Conn.

Riveting Machine Equipment

Linley Brothers Co., Bridgeport, Conn.

Riveting Machines

Grant Mfg. & Mchs. Co., Bridgeport, Conn.
Linley Brothers Co., Bridgeport, Conn.

Rad Cutters

Armstrong-Blum Mfg. Co., 841 N. Francisco
Av., Chicago
Lewthwaite Mchs. Co., T.H., 311 E. 47th, N.Y.

Safety Stops

The Atlantic Co., Chappaqua, N. Y.

Sanders, Bench

Up To Date Machine Works, 2900 S. Wabash
Ave., Chicago

Sanding Machines

Up To Date Machine Works, 2900 S. Wabash
Ave., Chicago

Scraping Machines

Anderson Bros. Mfg. Co., Rockford, Ill.

Shafts, Flexible

Strand Co., N. A., 6001 N. Lincoln St., Chgo.

Shaping Machines

Osborne & Sexton Machy. Co., Columbus, O.

Shears, Hand

Armstrong-Blum Mfg. Co. 841 N. Francisco
Av., Chicago
Lewthwaite Machine Co., T.H., 311 E. 47th
St., New York
Whitney Metal Tool Co., Rockford, Ill.

Shear, Power

Dreis & Krump Mfg. Co., 7440 Loomis
Bldg., Chicago, Ill.

Shears, Slitting

National Machine Tool Co., Racine, Wis.
Dreis & Krump Mfg. Co., 7440 Loomis
Bldg., Chicago, Ill.

Special Tools and Machinery

American Tool Works, Inc., Hartford, Conn.

Speed Reducers

Abart Gear & Machine Co., Cicero, Ill.
Boston Gear Works, Inc., North Quincy,
Mass.
Coffman Wheel Co., 1259 Altgeld St., Chgo.

Speed Reducers, Motorized

The Production Eqpt. Co., Cleveland, O.

Spot Welding Machines, Speed.

Esler Engineering Co., Inc., Newark, N. J.

Sprockets

Boston Gear Wks. Inc., North Quincy, Mass.
Coffman Wheel Co., 1259 Altgeld St., Chgo.

Stop Motions

The Atlantic Co., Chappaqua, N. Y.

Straightening Machines

Whitney Metal Tool Co., Rockford, Ill.

Stud Setters

Procurier Safety Chuck Co., 14 S. Clinton
St., Chicago

Tap Extractors

Walton Co., Hartford, Conn.

Tap Holders

Procurier Safety Chuck Co., 14 S. Clinton
St., Chicago

Tapping Attachments

Procurier Safety Chuck Co., 14 S. Clinton
St., Chicago, Ill.

Tapping Jigs, Universal

Heuser Mfg. Co., 1635 No. Paulina St.,
Chicago, Ill.

Tapping Machines and Attachments

Burke Machine Tool Co., Conneaut, Ohio
Procurier Safety Chuck Co., 14 So. Clinton
St., Chicago, Ill.
Whitney Metal Tool Co., Rockford, Ill.

Thermometers, Resistance Type

Illinois Testing Laboratories, Inc., 150 West
Austin Ave., Chicago, Ill.

Thread Dies

Colvan J. M., Yonkers, N. Y.

Threading Machines, Automatic, Stud

Grant Mfg. & Mchs. Co., Bridgeport, Conn.

Threading Tools

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago
Ridge Tool Co., Elyria, Ohio.

Tool Holders

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago
Western Tool & Mfg. Co., Springfield, O.

Classified Finding Index

Tools, Boring

Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago

Tools, Lathes and Planer

Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago

Tools, Machinists'

Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago

Tube Flanging Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Universal Drill Jigs

Heuser Mfg. Co., 1639 No. Paulina St.,
Chicago, Ill.

Universal Joints

American Tool Works, Inc., Hartford, Conn.
Boston Gear Works Inc., Northford Downs,
Mass.

Used and Rebuilt Machinery

American Machinery Co., Cleveland, Ohio
Armstrong, J. E., Waterloo, Iowa.

Atlas Equipment Co., 114 S. Clinton St.,
Chicago, Ill.

Bernstein, Geo. M., 221 N. Elizabeth St.,
Chicago, Ill.

Meier Mfg. & Mch. Co., Springfield, Ill.
Brady Mch. Co., Detroit, Mich.

Bruthers, Percy M. & Son, 114-118
Liberty St., New York City

Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.

Cincinnati Mch. & Supply Co., Cincinnati, O.
Clinton Machinery Co., 38 S. Clinton Street,
Chicago, Ill.

Columbia Machinery Co., Fort Wayne, Ind.
Consolidated Machine Shops 2852 Fulton
Chicago, Ill.

Cyphers & Wroe, Camden, N. J.
Davis Machinery Co., Toledo, Ohio.

Detroit Machinery Exchange, Detroit, Mich.
Eastern Machinery Co., Cincinnati, O.

Elyria Belting & Mch. Co., Elyria, Ohio.
Easley Machinery Co., E. L., 825 Rees St.,
Chicago, Ill.

Goldaba, Machinery Co., 826 W. Lake St.,
Chicago, Ill.

Hackett J. Lee, Detroit, Mich.
Hill, Clarke & Co., 645 W. Washington Blvd.,
Chicago, Ill.

Indianapolis Machinery & Supply Company,
Indiana, Ind.

Industrial Plants Corporation, New York City
Interstate Mch. Co., 130 S. Clinton, Chgo.

Iroquois Machinery Co., Buffalo, N. Y.
Johnson & Sons Machinery Co., Wm. C.,
St. Louis, Mo.

Jones Machine Tool Co., Cincinnati, Ohio
Kennard-Hafkin Mch. Corp., Jersey City,
N. J.

Klauber Mch. Co., E. L., St. Louis, Mo.
Lucas & Son, J. L., Bridgeport, Conn.

McDonald Machinery Co., St. Louis
Marr-Gallbreath Mch. Co., Pittsburgh, Pa.

Midland Steel & Equipment Co., 402 South
Clinton St., Chicago, Ill.

Midwest Equipment Co., 626 W. Lake St.,
Chicago, Ill.

Mid-West Machine Tool & Supply Company,
Davenport, Iowa

Miles Machinery Co., Saginaw, W. S. Mich.
Morey & Co., 45 Mill St., Astoria, Long
Island N. Y.

Used and Rebuilt Machinery—Cont.

Norton-Broadway Machinery Co., Cincinnati,
Ohio

O'Brien Machinery Co., Philadelphia
Oviatt & Co., D. C. Cleveland, Ohio

Osborne & Sexton Mch. Co., Columbus, O.
Rahn-Larson Co., Cincinnati, Ohio

Reliance Machinery Sales Co., Pittsburgh,
Pa.

Rentschler & Co., J. P., 6722 N. Maplewood
Ave., Chicago, Ill.

Russell Machine Co., Pittsburgh, Pa.
Scott-Hamshank Mch. Co., 4807 W. 20th St.,
Chicago

Segal Machinery Co., 809 W. Lake St.,
Chicago, Ill.

Stewah Tool Co., Ferndale, Mich.
Simmons Machine Tool Corp., Albany, N. Y.

Steege Electric & Machinery Co., 12 18 So.
Clinton St., Chicago

Stegeman Machinery Co., Milwaukee, Wis.
Strong, Carlisle & Hammond Co., Cleveland,
Ohio

Sun Machinery Co., 38 Van Ruren Street,
Newark, N. J.

Toledo Machinery Exchange, Toledo, Ohio
United Mchry. & Supply Co., St. Louis, Mo.

Victor Machinery Co., 128 S. Clinton Street,
Chicago, Ill.

Victor Machinery Exchange, 251 Center St.,
New York City

Waters, C. H., Elkhart, Ind.
West Penn Machinery Co., Pittsburgh, Pa.

White Mch. Co., A. D., 108 N. Jefferson
St., Chicago

Wrightsworth Mch. Co., Cambridge, Mass.
Wolnick Machinery Sales, 21st & Marshall
Bld., Chicago, Ill.

Valves, Foot, Lever & Solenoid

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Vises, Drilling Machine

Armstrong-Blum Mfg. Co., 841 N. Francisco
Av., Chicago

Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago

Graham Manufacturing Co., Providence, R. I.
Heuser Mfg. Co., 1639 No. Paulina St.,
Chicago, Ill.

Martin Tool & Die Works, J. E., Springfield, O.

Vises, Machinists'

Western Tool & Mfg. Co., Springfield, O.

Vises, Milling Machine

Graham Manufacturing Co., Providence, R. I.
Hartford Special Mch. Co., Hartford, Conn.

Vises, Shaper

Graham Manufacturing Co., Providence, R. I.

Welding Machines, Electric Spot

Eisler Engineering Co., Inc., Newark, N. J.

Welding Machines, Resistance

Eisler Engineering Co., Inc., Newark, N. J.

Wheel Dressing Diamonds

Mendes Cutting Factories, Inc., 505 Fifth
Ave., New York City

Wheels, Grinding

Chicago Wheel & Mfg. Co., M. C. Tool Div.,
116 S. Aberdeen St., Chicago, Ill.

Used and Rebuilt Machinery Section

Lists of Used and Rebuilt Machinery, either For Sale, Wanted, or For Exchange, set in uniform style, will be published in the Classified Section at the rate of 60 cents a line across the page, each issue, plus \$3.00 for name and address. Minimum charge, \$6.00. No display permitted.

Write directly to those offering the machines for sale, for prices and full descriptions. If what you seek is not advertised, use the blank enclosed to make known your wants in either new or used machinery and the publisher will pass them along to the advertisers.

FOR SALE BY

Mid-West Machine Tool & Supply Co.,

Davenport, Iowa

Drill, 4 spindle Avey No. 2MT, p.f.
Drill, ISS Garvin duplex, 2½" cap.
Grinder, 10"x36" Norton.
Grinder, No. 10 B. & S. ext.

Hobbers, Nos. 3, 12-B & C.
Lathe, No. 9 LeBlond multi-cut.
Millers, Nos. 1 & 2 Brown & Sharpe.
Turret lathe, Nos. 2 & 6 Warner & S.

FOR SALE BY

E. L. Klauber Machinery Co., 320-22 S. Third St., St. Louis, Mo.

Drills, 3 spindle Dwight Slate; 10 spindle Bausch multiple.
Lathes, 30"x14' Bradford; 22"-24"x12' Lodge & Shipley d. b. g., q. c. g.
Screw machines, No. 3 Wood tilted turret; No. 0 Brown & Sharpe automatic.
Tapping machines, ½" Rickert Shafer horizontal; No. 2BG Garvin.
Threading machines, ½" National; 1" Acme.

FOR SALE BY

United Machinery & Supply Co., 1241 Walton Ave., St. Louis, Mo.

Bending machine, Wallace No. 15.
Blue print machine, Pease, cyl. type
Compressor, 8x8 Curtis double m.d.
Hammers, Little Giant, 25 & 50 lbs.
Miller, No. 2 Osterlein.

Punch & sh., 1" in 1" H. & J. No. 3.
Punch press, No. 204-A Toledo.
Punch presses, Nos. 56, 167, 168 Tol.
Rolls, 12"x½" & 60"x10 ga.
Shaper, 17" Smith & Mills.

FOR SALE BY

Segal Machinery Co.,

810 W. Lake St., Chicago, Ill.

Drill, 5' Dreses, s.p.d., gr. box. \$350.
Drill, 25" Barnes, power feed.
Lathe, 16x7 Chard, q. c. g., tap. att.
Lathe, 26x14 Blaisdell, semi q. c. g.
Surface grinder, No. 3 Brown & Sharpe
Planer, 36x36x10' L. & D., 2 heads on crossrail.

Miller, No. 1 Kemp Smith divid. hd.
Miller, 4B Becker, vertical.
Screw machine, No. 3 Foster, equipt.
Shear, 62" Niagara, ft. pwr., 18 ga.
Planer Type, magnetic chuck, \$250.
350.

FOR SALE BY

C. H. Waters Machinery Co.,

221 Harrison St., Elkhart, Ind.

Dividing head, 14" Cincinnati univ.
Miller, No. 3 Cincinnati plain.
Miller, No. 2M Cincinnati univ.
Miller & driller, No. 1½ Knight, vert.
Slotter 18" Newton.

Shapers, 20 & 24" Gould & Eberhardt
cone drive, back geared.
Presses, No 104 Bliss Cons. d. c.
motor drive, like new.
No. 02 Bliss double crank.

Many others. Send us your inquiries.

USED AND REBUILT MACHINERY

FOR SALE BY

Victor Machinery Company, 126-128 S. Clinton St., Chicago, Ill.

Automatics, 2" Cleveland.
Automatics, No. 0 & 00 G. B. & S.
Drill, 3' Mueller rad. s. p. d.
Grinder, 10x30 Webster & P., univ.
Grinder, No. 5 G. & L. surf, m. d.
Hack saw, 6x6 Racine High-speed.
Lathes, 21x10 LeBlond q. c. g.
Lathes, 18x10 Bradford q. c. g.
Lathe, 19x8 Sidney, q. c. g., t. a.

Miller, No. 29 Ohio univ., vert. hd.
Miller, No. 3 Becker vert. m. d.
Punch press, No. 5 Toledo obi, 4 1/2" str.
Punch pr., No. 2 Toledo obi, arr. m. d.
Punch press, C52 Ferracute horn.
Shapers, 14" to 24".
Welders, new, 5 k. w. Dyer spot.
Welders, 10 k. v. a. Taylor-Winfield.
Welders, 20 k. v. a. Winfield butt.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road, N. S. - - - - - Pittsburgh, Pa.

Air compressor, 21 cu. ft. Gardner.
Automatic, 7" cone, 4 spdl., m. d.
Bulldozers, Nos. 3 and 9 W.-W.
Drill, 4 spindle No. 4 Colburn Mfg.
Drill, radial, 2 1/2" Mueller, s. p. d.
Drill, 4' Western radial, motor dr.
Drill, 6' Cincinnati-Bickford, radial.
Hammer, 100 lb. Beaudry upright.
Lathe, 48"x20" Betts-Bridge, m. d.
Press, No. 6 Bliss, double crank,
with Marquette cushion.

Presses, Bliss Nos. 18, 19, 20, 21.
Press, No. 14 Bliss toggle, 80,000 lb.
Press, No. 594 Toledo, 145,000 lb.
Roller lev., 52" McKay, univ., 9 ga.
Shaper, 16" Whipp, b. g., vee ram.
Shapers, 24" & 32" G. & H. 230 v. d. c.
Shaper, 24" Cincinnati b. g. crank.
Shaper, 24" G. & H. Hi-duty, s.p.d.
Shear, Niagara 10"x10 ga., 12" gap.
Shear, alligator 3" sq. Canton, with
power roller table, motor drive.

FOR SALE BY

Scott-Bansbach Machinery Co., 4607 West 20th St., Chicago, Ill.

Air compressor, Curtis model A, 4 1/2 x 4 1/2, 8 to 16 cu. ft.	\$ 50.
Air compressor DeVilbiss, 6" x 6", 17 to 29 cu. ft., air cooled	100.
Air compressor, Chicago P. short belt drive, 12" x 10", 369 cu. ft., 50 h. p., a. c. motor, starter, belt and tanks, Type NSB	500.
Automatic screw machines, B. & S., No. 00, 0, 2 and 2G	\$100. to 475.
Automatic screw machine, Gridley 4 spindle "F", 4" and 1 1/2"	150.
Automatic screw machine, Gridley 4 spindle, Model G, 9/16"	200.
Automatic screw machine, Cleveland Model A & B, 5 to 3 1/2"	\$125. to 700.
Bolt cutter, 1" Landis, belt drive	125.
Drill, Mason h. s. b. b., pedestal type, 4 speeds, with motor 220-60-3	100.
Drill, New Albany, h. s., motor drive, 110-60-1	100.
Drill, Avey, h. s., b. b., 14" swing, No. 2 M. T.	100.
Drill, 24" Sibley sliding head, b. g. and p. f.	125.
Drill, 3-spindle H. W., h. s., b. b. heavy duty, class B	150.
Gear cutter, B. & S. No. 3, 26" for spur gears	200.
Grinder, Gardner No. 4 disc, 23" dia. with press and tables, ball brg.	200.
Grinder, Ransom disc, 26" diameter with press and tables	150.
Hammer, No. 3A High Speed with motor 220-60-3, heavy duty	200.
Hammer, No. 3A High Speed belt drive, heavy duty	150.
Hammer, No. 5A High Speed, motor shelf	275.
Lathe, 12"x6" Worcester, geared head, semi q. c., with chuck	200.
Lathe, 13"x6" Hendey, quick change, with 2 chucks	150.
Lathe, 14"x6" American quick change	225.
Lathe, 15"x6" Sebastian, geared head, quick change	450.
Lathe, 15"x8" Von Wyck, l. c. g., with chuck	125.
Lathe, 16"x6" American, quick change, pan bed and chuck	400.
Lathe, 16x8 Hendey, q. c., taper attachment and chuck	350.
Lathe, 18"x8" Davis, d. b. g., q. c., heavy duty	450.
Lathe, 18"x8" 6" Chard, l. c. g., heavy duty	175.
Lathe, 16"x12" Hamilton, d. b. g., q. c., heavy duty, 2 chucks	475.
Lathe, 30"x13" H. S. & G. heavy duty, q. c., d. b. g. 16,000 lbs.	800.
Lathe, sliding gap, 28-48"x12" Harrington, plain change	400.

USED AND REBUILT MACHINERY

FOR SALE BY

West Penn Machinery Company

1208 House Building,

Pittsburgh, Pa.

Auto., Cleve. Model M, 4-sp., m. d.
Air compressors, 30 to 2500 cu. ft.
Bolt cutter, 2" Acme, sgl. hd., b. d.
Boring mill, 24" Bullard, side head.
Boring mill, 36" Bullard, side head.
Bor. mill, 36"-44" Niles, 2 hds. q. c. g.
Bor. mills, 42" & 62" Bullard, 2 heads.
Boring mill, 72" Niles, 2 heads, m. d.
Boring mill, 72" Col., 2 hds. m. d.
Boring mill, 10" Niles, 2 heads, b. d.
Boring mill, horiz. 64" Niles, fl. type.
Brake, box & pan, 60"x10 ga. D. & K.
Brake, hand, pwr., 10"x10 ga. Chgo.
Brake, No. 184 Chgo., 8"x10 ga. b. d.
Brake, 10" Dreis & K. #, m. d.
Buffer, Valley b. b., dbl. end., 3 h. p.
Buildozers, Nos. 2, 4, 6, 9, 28, & 30.
Cranes, Electric Traveling.
Die sinker, No. 3 P. & W., rev. tbl.
Draw bench, 150,000 lb. Stand, m. d.
Drill, mult. 4-spdl. Avey, belt drive.
Drill, radial, 24" Fosdick, t. a., b. d.
Drill, radial, 4" Prentice, t. a., b. d.
Drill, rad., 4" Cin-Bick. mtr. on arm.
Drill, radial, 6" Dreses, s. p. d.
Drill, radial, 6" Cin-Bickford, m. d.
Drills, upright 10" to 36".
Filing machine, No. 406 Oliver m. d.
Flanger, McCabe, 4" capacity, dies.
Forging mch. 12" Acme, st. fr. b. d.
Furnace, No. 152 Rockwell rot. hard.
Gear cutters, 11", 18" & 24" Gleason.
Gear cutter, spur, D. S. cap. 24"x34".
Gear cutter, spur, 36"x10" Newark.
Grinder, die, No. 101 Bridg., m. d.
Grinders, 8" Black & D., d. e., m. d.
Grinder, rad., 14" M. & D., m. d.
Grinder, surf. 42" Spring, tbl. 18"x84".
Grinder, surface, No. 16 Blanchard.
Grinder, tool & cut., No. 2 Walker.
Grinder, Univ. No. 2 Brown & S.
Generators, eng., oil, gas, belt & mtr.
Hammer, Blacker, power, 35-lbs.
Hammer, 40-lb. Bradley, cush. helve.
Hammers, Nos. 2-B, 3-B, 4-B, Nazel.
Hammers, steam, 600 lb. to 6000 lbs.
Header, No. 2 Wat. Far., o. d., tr. st.
Ice machines, 40-ton Frick.
Jacks, 35-ton Barrett, ball bearing.
Jig borer, Swiss MP-5, m. d.
Keyseater, No. 0 & 3 Baker.
Lathe, 14"x12" Lodge & S., g. h., m. d.
Lathes, 16"x6" & 18"x8" Sidney Mon.
Lathe, 16"x6" LeBlond, q. c. g., d. b. g.
Lathe, 16"x7" South Bend, q. c. g., m. d.
Lathe, 18"x6" Monarch, g. h., q. c. g., m. d.
Lathe, 18"x10" Reed-Prent. g. h. s. p. d.
Lathe, 24"x16" Bridgeford, g. hd. m. d.
Lathe, 26"x21" 6" Bridgeford, g. h.
Lathe, turret, No. 6 Warner & S.
Lathe, turret, 18" Libby, m. d.
Lathe, turret, 24" Steinle, 64" hole.
Lathe, turret, 34" Gisholt, b. d.

Lysholm tables, 72"x30".
Miller, pl., No. 34 Ohio, tbl. 134"x60".
Miller, pl., Nos. 3 & 5 Cinc., s. p. d.
Miller, universal, No. 3 LeBlond.
Miller, univ. Cin. tbl. 86"x134" m. d.
Motors, a. c. & d. c.
Nut mche., Wat-Far, 7" cold, b. d.
Pickler, 4 arm Mesta, 10" radius.
Pipe machine, 2 Landis, belt drive.
Pipe mches., 4", 6" & 8" Oster.
Planer, 30"x30"x10" Woodward & P.
Planer, 48"x48"x18" Cintl., belt drive.
Planer, o. s., 36"x36"x16" D. & H.
Planer, o. s., 48"x48"x16" D. & H. m. d.
Press, cam, No. 63N Bliss, db. l. act. inc.
Press, o. b. l., No. 4 Niagara 3" st. b. d.
Press, o. b. l. Bliss, Nos. 18, 19, 20.
Press, hyd., 400-ton Robertson, m. d.
Press, No. 784 Bliss, t. r., 10" str.
Press, No. 96-A Toledo, d. c. 6" str.
Press, No. 6 Bliss dbl. crank, 6" str.
Press, screw, No. 87 Niagara.
Press, wheel, 200-ton Elmes.
Punch, hand, Shatz, bar and ang.
Punch & s. No. 6 L. & A. 4" thru 4".
Punch, EF Cleveland, 36" thr., 14"-1".
Punch, mult., No. 5 H. & J. 10".
Riveters, air, hammer, spinning.
Riveter, No. 120 Grant, cap. 8", m. d.
Roll, bend 50" Bertach, 3/16" init. type.
Rolls, bending, 12"x4" H. & J. d. e.
Rolling mill, 6"x10" Standard, m. d.
Roller, thread, Nos. 10, 30, 40 W. F.
Saws, band, 26 and 33" Fay & Egan.
Saw, cold, No. 6 Coch. Hly., s. p. d.
Saw, cold, 48" Newton, m. d.
Saw, friction, Nos. 2, 3 & 4 Ryerson.
Saw, hack, 4"x4" Racine Jr., m. d.
Saw, hack, No. 4 Robertson, 8"x8".
Scale, sheet bundling, 2500 lbs.
Screw mchs. Nos. 52, 53, 55 Nat. A.
Shapers, 16", 20", 24" & 36" G. & E.
Shaper, 24" Flather, b. g., m. d.
Shears, alligator, 14", 2", 3" & 4".
Shear, angle, 6"x6"x1" H. & J.
Shear, bevel, Lennox 8", b. d.
Shear, circle, No. 13 Niagara, b. d.
Shears, foot, 30" and 36" Pexto.
Shear, sq. No. 196-F Nia. 8"x18 ga.
Shear, guil. No. 5 H. & J. 4" sq., m. d.
Shear, rot., 30" Quick, cap. 4" b. d.
Shear, square 8"x14 ga., Ohi. b. d.
Shear, 10" Nia. cap. 10 ga. 12" gap b. d.
Slotters, 6" Newton, 8" & 21" Betts.
Straightner, 72" Newbold, 9-roll m. d.
Straightener, 54" McKay, 17-rolls
4", dia. motor drive.
Straighteners, 1", 14", 4" rd. Abramson.
Tapping machine, vertical 4" Baker,
table 22"x17", b. d.
Upsetters, 1" to 6".
Welder, butt type B6-No. 27 Tay.-
Winf. 15 k. w. 4" cap.

USED AND REBUILT MACHINERY

FOR SALE BY

F. A. Schack, Trustee-in-Bankruptcy

Fort Wayne National Bank, Fort Wayne, Ind.

Boring mill, 10' Niles, vertical.....	\$ 250.
Boring mill, No. 2 Barrett, horizontal, 5" bar.....	225.
Crane, 20-ton J. & J., E. O. T., 40' span, 4 motor.....	900.
Drill, 6' Baush, radial, b. d.....	125.
Hammer, 1500 lb. Morgan, steam or air.....	200.
Planer, 48"x48"x12' Niles, 2 heads.....	275.
Planer, 48"x48"x16' Niles, 2 heads.....	275.
Planer, 96"x48"x12' Pond, 4 heads.....	450.
Planer, 72"x72"x24' Niles, 4 heads.....	900.
Planer, 14' G. & W. boiler plate, full length clamp.....	100.
Punch, G. & W., 1-1/16" through 1" stock, 30" throat.....	90.
Shear, 12" G. & W., 30" throat.....	85.
Slab miller, 20"x20"x5' Eynon & Ingersoll, b. d.....	75.
Slotter, 12" Freeland, crank.....	70.

FOR SALE BY

The Jones Machine Tool Co., Front & Pike Sts., Cincinnati, Ohio

Air compressor, 10x10 Bury.	Radial drill, 5' Am. s. p. d., enc. hd.
Bolt cutter, 2" Landis (long bed).	Radial drill, 6' Am. s. p. d., enc. hd.
Bolt cutter, 1 1/2" Landis, single spdl.	Rail drill, 10' Andrews 16-sp. 1/4" cap.
Bolt cutter, 1 1/2" Landis, dbl. spdl.	Square shear, 10' Cinc., 3/16" cap.
Boring mill, No. 32 G. & L., s. p. dr.	Shear, 10' Poorman 14 gauge.
Brake drum truing lathe, m. d.	Shear, 60" Yoder, rotary, 16 ga.
Drill, No. 14 Colburn heavy duty.	Shear, 18" Southwark rotary, 10 ga.
Gear cutter, No. 13 B. & S., bevel & sp.	Shear, 37" Toledo 16 ga. 15" gap.
Gear hobber, No. 12 Barber-Colman.	Upsetters, 2" Ajax, belt drive.
Grinder, No. 1 Diamond surf. 12x24"	PRESSES
Grinders, disc, various sizes.	No. 90-B Toledo, double crank.
Hammer, 1000 lb. steam, s. frame.	No. 25 Niagara arch press.
Keyseater, No. 1 Baker.	No. 92 B Toledo 35" dbl. crank, grd.
Lathe, 27"x16" American grd. head.	No. 43 Robinson 46" dbl. crank, grd.
Lathes, shapers & planers, all sizes.	3—No. 6 Toledo, b. g. inc. presses.
Milling machines, all sizes.	Open back inclinables. Various sizes.
Nibbler, No. 1 Gray 3/16" capacity.	120" Ohl, 10 ga., press brake.

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FOR SALE BY

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Automatics, 3", 1 1/2", 1 1/4" 4-spdl. model	Press, No. 165 Toledo toggle, m. d.
G Gridley and 4 1/2" single spindle.	Saw, No. 6 Cochrane-Bly, with filer.
Drills, No. 2, 5 spdl. Detroit; No. 17	Shapers, 24" Potter & Johnston; 24"
Foot-Burt, 4 spindle rail; many	Ohio, helical steel gears.
others, all types and sizes.	Shears, 8"x14 ga. Stoll overdriven;
Grinders, No. 1 univ. gage, m. d.;	5"x10ga. Niagara overdriven; No. 54
No. 2 Cincinnati centerless m. d.;	Hendley & Whittemore comb.
No. 3 Barber-Colman hob; Norton	Straightening rolls, No. 5—35" Hilles
crankshaft, 14x36 and 16x36.	& Jones 18 roll, 2 1/2" dia., geared
Jig borer, No. 2 P. & W., m. d.	motor drive, like new.
Hammers, 200, 400, 800 lb., automatic.	Tappers, No. 1 & 2-X Garvin, b. d.
Pipe mchs., 4" Oster, 8" Treadwell.	Thread miller, 6x60 P. & W., b. d.
Planers, open side, 36x36x14" D. & H.	Threaders 1/2" Landis, double head.
3 hd. m. d.; 42x42x12" D. & H. 3 hd.	Turret lathes, Warner & Swasey,
Polishers, No. 3D Gardner d. s. m. d.	Nos. 2, 4, 6, No. 1-A, 2-A and 3-A.
Lathe, 18x10 Monarch, 8 spdl., hel. grd.	hd., a. c. motor-in-base excel. cond.
Miller, No. 2 Kempsmith Maximiller, ex. long 72" table, vert. hd., a real buy.	

Over 600 tools available. Send us your inquiries.

USED AND REBUILT MACHINERY

FOR SALE BY

McDonald Machinery Co.,

Bolt mchs., Landis & Acme 14".
Boring mill, Lucas No. 21 horizontal.
Brake, D. & K. 6' 10 ga., pwr. leaf.
Brake, Ohi 8' 10 ga. power press.
Drills, Cin-Bickford 3' & 3 1/2" radials.
Drill, Sipp 4-sp., h. s., b. b. pwr. fd.
Gear hobber, G. & E. 24" & 60".
Grinders, B. & S. No. 2 surf. & univ.
Grinder, Cincinnati 14"x72" plain.
Grinders, Person-Arter 16" rot. surf.
Keyseaters, M. & M. No. 2.
Lathes, Hendey 20"x10", 13"x6" &
20"x12", grd. hd.; 50 others in stock.
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Milling mchs., B. & S. No. 14 Cinc.

1535 N. Broadway, St. Louis, Mo.

No. 14, Hendey No. 1-B, Kemp.
No. 3; Ohio No. 29; LeBlond No. 4
heavy, all universal; Kemp. No. 1,
LeBlond No. 3-H; Brown & S.
No. 3-B, s. p. d., Cleveland No. 2,
s. p. d., all plain, Cincinnati 12"
Mfg.; Cincinnati Semi-Auto.
Punch press, d. c. grd., 79" between
uprights, 5" stroke, wt. 38,000 lbs.
Screw machines, Foster No. 5, gr. hd.
Shapers, G. & E., S. & M., Cin., Ohio,
American, Steptoe, Queen City,
12", 16", 18", 20", 24" and 26".
Square shears, Bertsch 10' 16 ga.
Turret lathes, W. & S. No. 2A univ.

FOR SALE BY

Marr-Galbreath Machinery Co.,

Air compressor, 10x10" Chgo., n.s.b.
Air comp., 15-21 cu ft., 175 lb., m. d.
Angle roll, No. 3 Niagara, 1 1/2"x3/16".
Boring mill, horiz. 4" bar, Niles.
Boring mill, 30" Colburn.
Boring mill, 36" Bullard, s. h., m. d.
Boring mill, 54" Colburn, m. d.
Boring mill, 54" King, for m. d.
Brake, 8' x14 ga. D. & K., belt.
Brake, 48" x18 ga., P. S. & W., hand.
Brake 10' Keene toggle, 16 gauge.
Brake, 10' x3/16" Dries & K., power.
Broaching mch. Nos. 1 & 3 LaPointe
Crimping roll, 6 1/2" Robinson, 16 ga.
Die sinker, No. 3 P. & W., b. d.
Drills, 20" b. g., p. f.
Drill, 26" Rockford, g. f. taper att.
Drills, radials, 3' & 3 1/2", Cin.-Bick.
Engine, Diesel, 166 h. p. horizontal.
Engine, gas, 55 h. p. West., 2-cyl.
Forging mchs., 14", 3" & 3 1/2" (steel).
Generators, 50 & 125 k.v.a., Fa-Mo.,
3/60 230 v.
Grinder, No. 1 LaSalle, comb. surf.
Grinder, universal t. & c. Nos. 2 & 3.
Hack saw, 13"x16" Peerless, b. d.
Hammer, No. 2-B. Nazel, m. d.
Hammer, 40 lb. Bradley, H. H.
Hammer, 100 lb. Bradley, U. S.
Hammer, 125 lb. Beaudry upright.
Hammer, 800 lb. Erie stim. forg., s.f.
Hammer, 1000 lb. Chbg., steam drop.
Hoists, chain, 1 to 8-tons capacity.
Keyseater, 24"x23" Morton.
Lathe, 13"x6" Sebastian g. h., a.c.m.
Lathe, 14"x6" Davis, g. c. g., t. a.
Lathe, 16"x8" South Bend.
Lathe, 16"x10" W.-B., q. c. g.
Lathe, 20"x8" Hendey, tie-bar, t. a.
Lathe, 20"x10" Hendey tie-bar, t. a.
Lathe, 18"x12" Hendey, t. b.; t. a.
Lathe, 19"x10" LeBlond, q. c. g., t. a.
Lathe, 24"x16" S. & B., LeBlond g. h.
Miller, No. 2 Cincinnati, pl. cone.

58 Water St., Pittsburgh, Pa.

Miller, No. 4 Hendey, Lincoln type.
Millers, plain, No. 3 LeBlond.
Miller, No. 25 Becker, plain.
Miller, No. 28 Ohio; No. 3 Cin'ti.
Miller, 2-GS. Hendey, g. b., s. p. d.
Millers, horiz. No. 4 Ohio, 72x30x20"
Millers, vert., Becker, 3
Motors, 1, 2 & 3 ph., also d. c.
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Pipe machine, 8" Jarecki.
Planer, 24"x24"x4" Pond, 1 head.
Planer, 30"x10" W. & P., 2-heads.
Press, No. 2 Michigan, horn 900 lb.
Presses, horn, equal No. 16 Bliss.
Presses, trimming, No. 58 1/2 Tol., m. d.
Press, 42-h.p. Toledo, horn, plain.
Presses, o. b. l., 18, 20 Bliss, plain.
Press, 74 1/2 S. Bliss b. g., 10" str.
Press, 75 1/2 Bliss, b. g., t. r., 5" str.
Press, 78 1/2 Bliss, d. g., t. r., 10" str. (2).
Presses, 250-ton B. & B. tire, vert.
Punch, s. e., Badger, 7" thr. 1 1/2"x3/4".
Punch, s. e., No. 1 L & A 1 1/2"x1", 30" t.
Punch & shear, d. e. 16" thts; 1 1/2"x1"
with angle & barshear blades, m. d.
Punch & sh., SE. No. 6 L. & A. 1 1/2"x1"
Riveters, 2-A, 5 1/2" B. high speed.
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Shapers, 16" G. & E., m. d.
Shaper, 24" Hollingworth b. g., vise.
Shaper, 24" P. & J down feed & m. d.
Shaper, 25" S. & M., b. g., crk., b. d.
Shear, foot, 36" Niagara, 18" gap.
Shear, thltless Lennox, 8".
Shear, rotary, 16 ga., Yoder, 24" thr.
Shear, 10' x16 ga. Ohi power.
Slotter, die, Garvin, cone drive.
Testing mch., 200,000 lb. Olsen, pl. 75.
Testing machine, 150,000 lb. Olsen.
Testing mch., forcement, 50,000 lb. cap.
Welder, butt, 200 & 300 k. w.
Wheel press, 60-ton W. S., 34"x58 1/2".

USED AND REBUILT MACHINERY

FOR SALE BY

J. P. Rentschler & Co., - 6722 N. Maplewood Ave., Chicago
 Presses, several inclinables.
 Press, No. 2-W Bliss wiring.
 Presses, Nos. 203 B, 201 C Toledo d.c.
 Press, embossing, 500 ton cap.
 Press, No. 14½ Toledo Horn., grd.
 Press, No. P5 Ferracute Fw.
 Press, No. DG54 Ferracute, 8" str.
 Apr. brake, No. 206 D. & K. 10' x 4".
 Riveting hammer, No. 3-A Hi-speed.
 Milling mche., No. 3A B. & S. univ.

FOR SALE BY

Atlas Equipment Company, - 114 So. Clinton St., Chicago, Ill.
 Boring mill, Lambert, 3" bar.
 Drill, Allen 4 spindle, m. d., b. b.
 Drill, Avey, 6 spindle, v. b.
 Miller, No. 2 Rockford plain.
 Miller, No. 3 Kempsth. Universal.
 Miller, No. 3A, B. & S. Univ. s.p.d.
 Radial drill, 5' Amer. Univ. m. d.
 Radial drill, 3' Fostick.
 We have a complete line of quick change lathes, from 9 to 42" swing.

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Sampson Tool Co., Inc., 101 Walker St., New York, N. Y.
 (Used Machinery Department)
 Automatic, No. 52 National Acme, over 12,000 serial, 4" sp., complete. \$ 300.
 Combined punch, splitting shear, bar, angle, and tee cutter, Schatz..... 1,000.
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 Hoist, new 6-ton Chisholm & Moore cyclone, h. a., spur gear..... 125.
 Gang slitter, 21" Lamb & Nash, 10 h. p., a. c., knives, etc., quite new. 500.
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Midwest Equipment Co., - 628-30 W. Lake St., Chicago, Ill.
 Air compressors, 8x8, 1. R. compl.
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 Lathe, 17x8 Sidney, l.c.g., complete.
 Lathe, 16x8 Hendy, q. c. g., tap. att.
 Lathe, 14x6 Sidney, quick ch. gear.
 Lathe, 34x10 Wolcott, q. c. g., comp.
 Lathe, 12x5 Pratt & W., q. c. g., col.
 Lathes, Stark 4" & ½" cap. with col.
 Planers, Lathes, Screw Machines, Air Compressors, Woodworking Machines.
 Miller, No. 1 Kempsth. pl., comp.
 Miller, No. 0 Brown & Sharpe pl.
 Miller, No. 14 Rockford, plain.
 Miller, No. 2 Becker, vertical.
 Press, No. 78-C Niagara dbl. crank.
 Screw mchs., Nos. 4 & 3 Foster, w. f.
 Shear, Quickwork, pwr. dri. 14 ga. cap.
 Spot welder, 19 kva Thom., 14" arm.

FOR SALE BY

Geo. M. Bernstein & Co., - 14 S. Clinton St., Chicago, Ill.
 Brake, 6' x 1½" Chicago, power.
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 Drill, 14" Rockford, ½" capacity.
 Drill, 20" Ryerson, b.g. p. f., No 4 mt.
 Drill, 26" Barnes slid. hd. .bg., p. f.
 Drill, 2½" Fostick radial, arr. m. d.
 Drill, 3" Silver radial, s. p. d.
 Grinder, Blau twist drill, 2" cap.
 Grinder, No. 13 B. & S. universal.
 Grinder, No. 2 LaSalle surf., chuck.
 Keyseater, No. 2 Davis, cutter.
 Lathe, 14" x 6" Star, pcg, equipment.
 Lathe, 20" x 8" G. K. pcg, equipment.
 Miller, No. 2 Fox hand.
 Miller, No. 1 Bick, hand, pwr feed.
 Miller, No. 2B Rock. univ., all equip.
 Press, No. 2 Robin., o. b. i.; 2" str.
 Press, No. 3 Rock. o. b. i.; 2" str.
 Saw, 6" x 6" H. & R. metal band.
 Saw, No. 4 Marvel, high speed.
 Screw machine, No. 2G B. & S. auto.
 Shaper, 16" Smith & Mills crank.
 Shaper, 20" Kelly crank; bk. grd.
 Tappers, Nos. 1 & 2 Garvin auto.
 Brand New 6" Swivel Base Graduated Vises \$25.00, Regularly \$50.00.

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The Elyria Belting & Machinery Co.,

Corner Williams and Buckeye Streets,

Elyria, Ohio

Compressors, I. R. 16x14, 10x4, 12x10, 9x8.
Compressor, Sullivan, 20x12x16, 872 cu. ft., 100 lb. pressure.
Forging presses, Nos. 55 & 56 Consolidated.
Lathe, 24"x12" Advance, 92" centers, d. b. g.
Lathe, 14"x6" Mulliner Tool Room, taper attachment.
Lathe, 19"x12" LeBlond, heavy duty.
Miller, No. 20 Ohio Universal, 20x7x17.
Motor, 100 h. p., synchronous, 3/60/1200, 50 deg., with exciter.
Press, No. 103 Consolidated, double crank, 3" stroke.
Presses, No. 32 Bliss, 3" stroke; No. 37 Williams & White multiple punch, 1 1/2" stroke; No. 54 Walsh geared, 3" stroke.
Punch press, No. 55 Toledo, 16" stroke.
Shapers, crank, 24" and 34" G. & E., b. g.

FOR SALE BY

Brown Machinery Co.,

2333 N. 9th St., St. Louis, Mo.

Drills: 24", 26" and 32"; No. 66-D
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Drill, Allen B., single spindle, m. d.
Drill, Demco b. b., m. d.
Grinders: No. 6 Besly dbl. spindle;
No. 220 Badger auto. disc; 12x30"
Modern, plain, s. c. c. s.; No. 4
Cincinnati, 14x72 cylindrical; P. &
W. 36" vertical surface.
Groover, power, 6' horn.
Hammer, 40 lb. Bradley helve;
100 lb. Little Giant.
Lathes, 30" Blaisdell, 28" Harrington
gap, ext. bed; 26" Putnam, taper
att., 18" & 16" Lodge & Shipley;
16" & 14" Monarch; 7"x6' Lo-swing;
No. 4 Wood Tilted Turret.
Millers: No. 2 Hendey-Norton, univ.;
No. 3 1/2 Fox; No. 4 Hendey Lincoln.
Planer, 42x42x10 Pond.
Press, No. 7 Zeh & Hahneman,
Nos. 1, 3, 4 Loshbough-Jordan.
Press, No. 4 Bliss, cons. comb. grd.
Punch, Cleveland C 1/2 in 1/2"; Rock
River Style L 1/2 in 1/2".
Punch & shear, No. 9C Beloit, 4 in 1".
Punch & shear, L. & A. 1/2" cap.
Riveter, No. 5A High Speed, 1/2".
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Shaper, 20" Columbia; 24" G. & E.
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1 1/2" double head and single head.
Welder, 20 k. w. Agnew.

FOR SALE BY

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Air compressors, all sizes.
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Bolt threaders, 1" & 1 1/2" Landis.
Boring mills, 36", 42", 52" & 62".
Bulldozers, No. 3 and No. 4.
Drill, 1-spindle Avey.
Drill, 6' arm American radial.
Grinder, Wells Bros. universal.
Grinder, 12"x60" Landis universal.
Grinder, 12"x36" Thompson univ.
Grinder, No. 60 Heald cylinder.
Hammer, No. 3B Nazel.
Hammer, 60 lb. Bradley helve.
Lathes, 16"x6" tool room, (2).
Lathe, 16"x7" P & W. geared head.
Lathe, 16"x9" Lehman.
Lathe, 18"x10" South Bend.
Lathe, 24"x12" Schumacher & Boye.
Lathe, 24"x14" Schumacher & Boye.
Lathe, 36"x15" American, q. c. g.
Lathe, 30"x16" Prentice, geared hd.
Millers, Nos. 3 & 4 Brown & S., pl.
Miller, No. 2 Cincinnati, plain.
Miller, Ingersoll slab, 27"x23"x14"
bed, 4 heads, motor drive.
Pipe machines, 4" and 8".
Planer, 60"x48"x10 Gray.
Press, No. 1 1/2 Bliss toggle.
Press, No. 24 Toledo cam drawing.
Press, No. 723 Toledo cam drawing.
Punch, No. 14 W. W., 12" throat.
Punch, two 20" throats, cap. 1" in 1".
Sand slinger, Beardsley & Piper.
Shaper, 16" Smith & Mills.
Shaper, 24" American, motor drive.
Shear, circle, No. 310 Niag. 48" thr.

USED AND REBUILT MACHINERY

FOR SALE BY

Brownell Machinery Co.,

150 Pine St., Providence, R. I.

Cam cutter, Pratt & Whitney.
Drill, radial, 4" American.
Driller & tapper, Boley 10 spindle.
Grinder, No. 2 1/2 Bath universal.
Grinder, 14" P. & W. vert. sur. b. b.

Miller, 2-M P. & J. horizontal.
Planer, 24x24x6" Whitcomb.
Press, No. 17 Greenerd arbor.
Screw machines, No. 2 B. & S. auto.
Screw machine, No. 3 B. & O.

FOR SALE BY

The E. L. Esley Machinery Co.

Telephone Lincoln 6320

831 Rees St., Chicago

Drill, 4 spindle Allen, m. d.
Lathes, 13" and 18" South Bend.
Miller, No. 3 Cincinnati univ.
Miller, No. 2 BS, K. & T., pl. dbl. o. a.
Press, No. 2 Toledo, o. b. i.

Press, No. 21 1/2 Bliss, o. b. i.
Shears, 42" Stoll, 16 ga. cap.
Shear, 10' 4" cap. Streine, m. d.
Shears, 16' 3/16" cap. L. & A., m. d.
Welder, spot, 25 k. w. Federal.

FOR SALE BY

Columbia Machinery Co., 130 E. Columbia St., Fort Wayne, Indiana

Automatics, No. 0, 2, 2-G.
Air compressors, all sizes.
Brakes, 3, 8, 10 ft. steel hand.
Drills, 24" Cincinnati sliding head:
1-spindle No. 3 Leland-Gifford;
3-spindle No. 2 Avey.
Hack saw, Atkins m. d.
Millers Nos. 2 and No. 3 plain; No. 3

Universal s. p. d. Ryerson; No. 2
Cincinnati s. p. d. plain; No. 1 1/2
B. & S. universal motor drive.
Lathes, 9x3, 13x6, 18x8 South, 18x8
Wolcott, 18x8 Chard, No. 4, No. 6
and 2A W. S.
Press, No. C5 Ferracute.

FOR SALE BY

Wigglesworth Machinery Company

199 Bent Street,

Cambridge, Mass.

Borer, No. 35 Landis floor.
Boring mill, No. 0 G. & L.
Engraver, E-S Keller.
Grinder, 20"x168" Landis plain.
Grinder, 53" Besly horizontal disc.
Lathe, 25"-38"x24" Le Blond, gd. hd.
Lathe, 38"x15" Niles-Bement-Pond.

Miller, No. 3 Brown & Sharpe.
Miller, 3B heavy Brown & Sharpe.
Spline miller, 6" Taylor & Fenn.
Jones & Lamson, 2 spdl., like new.
Shear, combination, Schatz.
Turret lathe, No. 4 Warner & S.
Turret lathe, No. 6 Warner & S.

FOR SALE BY

The O'Brien Machinery Co.,

113 N. Third St., Philadelphia, Pa.

Bending rolls, 10' Bertsch, 1/2" cap.
Boring mill, 34" King, 1 head.
Boring mill, 72" Gisholt vert., 2 hds.
Column facer, 14" Espen-Lucas.
Crane, electric travel, 15 ton a. c. mtrs.
Drills, all sizes upr., sensl. & radial.
Drill, Minster heavy duty 2 1/2" cap.
Grinder, 10"x52" Landis, self contained, plain.
Hammer, 800 lb. Erie, steam forging.
Lathe, 18"x6" Monarch, taper.

Lathe, 38"-60"x32" McCabe 2 in 1.
Lathe, 42"x28" Fay & Scott b. dr.
Miller, No. 3 B. & S., pl., s. p. dr.
Miller, No. 3 Becker universal, belt drive, table 12"x54".
Pipe machines, 2, 4, 6, 8 and 12" belt and motor drive.
Punch, No. 3 Southwark 4x1", mtr.
Punch, Thomas angle duplikator.
Shear, Niagara 8", cap. 3/16", 1" gap.

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FOR SALE BY

J. Bleser Mfg. & Machy. Co., 16th & Madison St., Springfield, Ill.

Drill, radial, 7' Bement, \$395.
Lathe, 14"x6' Springfield, first class.
Lathe, 14"x6' Hendey, yoke head.
Lathe, Lodge & S., 36"x18' q. c.
Lathe, turret, No. 2 W. & S., hand.

Miller, No. 3H LeBlond, plain.
Miller & driller, No. 2 Knight, vert.
Press, American Can No. 4, arch.
Shapers, 12" and 16" G. & E.
Slotter, 13" Bement, \$295.

FOR SALE BY

H. F. Wolnick Machinery Sales

Phone Lawndale 1777 - - 21st & Marshall Blvd., Chicago

Automatics, P. & J. 5A & 6A.
Boring mills, vertical & horizontal.
Drill presses, 2, 3, 4 spindles.
Gear cutting mchs., many makes.

Grinders, all makes and sizes.
Lathes, 12" to 98" swing.
Punch presses, all sizes.
Screw mchs., univ., #2 & 3A W. & S.

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Bargains with Safety

Boring Mills

14'-20' Niles Vertical, Belt.
42" Bullard New Era, M. D.
44"-36" Niles Vertical, M. D.
42" Gisholt Vertical, M. D.
60" Colburn Vertical, M. D.
Lucas Horizontal, 3" bar.

Brakes

12'x $\frac{1}{4}$ " Loy & Nawrath, M. D.
10'x10 Gauge Geo. Ohl, Belt.
8'x10 Gauge Geo. Ohl, Motor Dr.

Drills

5' Drees Radial, Motor Drive.
5' N. B. P. Radial, Semi-Univ.
6' Cincinnati Bickford Radial.
1 spindle Sipp, High Speed.

Gear Cutters, Etc.

No. 13 B. & S. Heavy NEW (2).
No. 13 B. & S. Light.
No. 6 Fellows Gear Shaper.
No. 7 Fellows Gear Shaper.
No. 61 Fellows Gear Shaper.
No. 65 Fellows Gear Shaper, Belt.
Garrison Gear Tooth Grinder.
11" Gleason Gear Generator.
18" Gleason Gear Generator.

Grinders

No. 3 Abrasive, Horiz. Sp., M. D.
No. 2 Cin. Centerless, V-belt M. D.
No. 2 B. & S. Surf., (3) Belt & M. D.
No. 13 B. & S. Univ. & Tool, Belt.
No. 20 Heald Rot. Surfacers, S. P.
16"x48" Landis Crankshaft.
No. 70 Heald Internal (2) Belt.
No. 75 Heald Internal, Belt.
10"x20" Landis Cylinder.
No. 16 Blanchard, M. D.

Lathes

12'x5' Cleveland. (15) See Opposite page.
14"x6" Cisco, C. C. G. Belt.
16"x6" Lodge & S. Geared Head.
18"x10" American, Grd. Hd. (2).
24"x10" American, Geared Head.
33"x12" Lodge & Shipley Cone.
46"x28" Houston S. & G., G.H. (2)
60"x50" Pond, Cone.

Milling Machines

No. 2B Milwaukee Univ. S. P.

No. 3B Milwaukee Univ. S. P.
No. 3 Cincinnati, Uni. Cone. (2).
No. 3 Cincinnati, Plain, M. D. (2).
No. 4 Hendey, Plain, M. D.
No. 2 $\frac{1}{2}$ B Milwaukee Vert. S. P.
No. 4 Cincinnati Vert., S. P. Late.
No. 5C Becker Vertical, Cone.
24" Cincinnati Duplex.
No. 2 Garvin Duplex.
No. 2 Knight Vert. Milling & Drill.

Presses

No. 5A Toledo, Geared (2).
No. 5A Toledo, Flywheel (2).
No. 6 Toledo Geared (4).
No. 201-B Toledo.
No. 5 V. & O.
No. 3-C Ferracute (2).

Shears

8'x $\frac{1}{4}$ " Geo. Ohl M. D.
13'x14 ga. Geo. Ohl, Belt.
No. 3 Quickwork Rot. $\frac{1}{4}$ " cap.
No. 3A Royersford D. E. Punch & Shear, Motor Drive, NEW.
Yoder Rotary 36" Throat. 3/16".
90"x $\frac{1}{4}$ " H. J. Plate Shear.

Turret Lathes

No. 2A Warner & S., S. P.
No. 1B Foster Motor Dr., Grd. Hd.
No. 4 W. & S. Universal Belt.
No. 2 W. & S. Fox Monitor.

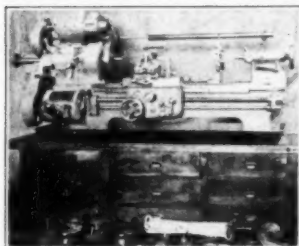
Miscellaneous

No. 4-E Keller Die Sinker, M. D.
Hayes Elec. Furnace.
Brinell Hardness Tester.
Olsen Impact-Shear Tester.
1 $\frac{1}{2}$ " Ajax Upsetter & Forger.
10" Dill Slotter.
No. 1 Baker Keyseater.
16" H. & J. Plate Planer.
8x8 In. Rand Air Compressor.
25K. W. Gen. Elec. Generators.
Gasoline driven, (2) NEW.
No. 3 Greenerd Arbor Pr NEW.
Hisey-Wolf Bench Drills NEW.
40" Draw Bench, Motor Drive.
16" Draw Bench, Belt.
10K. W. Toledo Aut. Spot Welder.
No. 1 B. & S. Gear Tester.
No. 00 Baker Keyseater.

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224-230 Culver Ave., Jersey City, N. J.

Brand New Precision Lathes



EQUIPMENT

Steady rest, taper attachment; follower rest; draw-in bar; 2 face plates; 1-8" Westcott 4-jaw combination chuck; 1-3-jaw chuck; No. 3 Jacobs drill chuck. 4 lathe centers, V centers, stop center. 2 Woodworking centers. 1 Wood turning rest. Extra gears, pan bed, etc. 12 collets. Extra pinion gear.

12"x5' Cleveland Precision Lathes, Mnfd. by Simplex Mche. Tool Co.

Swing over bed 12 1/2".

Distance between centers 28".

Number of spindle speeds 6.

Number of feed changes in gear box 18.

Hollow spindle 1 3/16" diam.

Compound rest. Power cross feed.

Mounted on bench as shown.

Complete with motor.

Brand new, packed in original crates.

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Kennard-Rafkin Machinery Corp.
224-230 Culver Ave., Jersey City, N. J.

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Low Prices Offered by Receiver of Large Mfg. Plant
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Balancing Machines
Boring Mills
Tiering Machines
Planers
Gear Shapers & Hobbars
Arbor Presses
Reaming Machines
Nickel Plating Equipment
Motors, Generators
Miscellaneous Equipment

What do you need? Write today for description and prices.

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Modern Machine Tools

SHAPERS

16" Hollingsworth.
16" Ohio.
20, 24" Cincinnati.
20" Columbia.

20" Kelly.
20", 25" Smith & Mills.
24", 26" Gould & Eberhardt.
20", 24" Walcott.

PLANERS

24" Cincinnati crank.
24"x24"x14" Cincinnati, 2 heads.
28"x28"x8" Gray, 1 head.
30"x30"x14" Cincinnati, 2 heads.
33"x33"x8" Ohio, 2 heads.

36"x36"x12" Gray, 3 hds, reversing m. d.
48"x48"x20" Cincinnati, 4 heads.
60"x48"x24" Gray, spiral drive, 3 hds.
60"x48"x28" Cincinnati, 4 heads.
62"x62"x40" Cincinnati, 4 heads.

GRINDERS

No. 2 Diamond surfacer
No. 2, 3 Wilmarth & Morman Surf.
12" Graham Ring.
14" Pratt & Whitney Vert. Surf.
No. 16—26" Blanchard, belt drive.
No. 33 Abrasive, motor in base.
No. 200, 210 Heald ring.
No. 255—12" Heald rotary.
No. 260—16" Heald Rotary.
60" Bridgeport face.
60" Springfield face.

84" Diamond face.
No. 1, 2, 3, 4 Brown & Sharpe Univ.
No. 13 Brown & S. Univ. & Tool.
No. 4 Landis Universal.
No. 51 Besly Disc, motor drive.
No. 120 Gardner Disc.
No. 70 Heald Internal, clutch head.
10x36" Landis plain cylinder m. d.
10x36" Norton plain cylinder.
12x72" Norton.
16x52" Landis, m. d.

ENGINE LATHES

14"x6" Hende, arranged motor drive.
16"x6" Lodge & Shipley selective hd.
16"x8" LeBlond, taper.
16x32"x8" Putnam, cone, gap.
18"x6" American, geared head.
18"x8" LeBlond, cone.
18"x8" Lodge & Shipley, selective hd.
18"x10" Greaves-Klusman, grd. head.
20"x10" American, geared head.
20"x8" Hende geared head.

20"x10" Boye & Emmes, cone.
21"x10" LeBlond, cone, taper.
23"x10" LeBlond grd. head, taper.
24"x24" Boye & E. geared head, latest.
24"x12" American geared head.
27"x16" American, grd. head, taper.
36"x18" American geared head, taper.
36"x28" American grd. head, taper.
36"x40" American, grd. head, taper.

MILLING MACHINES

No. 1 Cleveland Universal, s. p. d.
No. 1B LeBlond Universal, cone.
No. 1½, 2 Brown & S. Univ., cone.
No. 2A Hende-Norton Univ., s.p.d.
No. 3A heavy, B & S. Univ., m. d.
No. 3 Cincinnati Universal, cone.
No. 3 Cincinnati Universal, m. d.
No. 3 Kempnith Universal, cone.
No. 3 Ohio Universal, cone.
No. 3A Owen Universal cone.
No. 2, 3, 4 Cinc. vertical, s. p. d.
No. 3, 4, 5, 6 Becker vertical.

Becker vertical Continuous miller.
No. 1M, 2, 3, 4, 5 Cinc. Pl., s. p. d.
No. 3, 4, 5 Cinc. pl., rect, overarm.
No. 2 Kempnith pl., motor in base.
No. 3B, 3B Heavy, 4B Heavy, 5B Heavy B. & S. Pl., md., flanged spdl.
No. 2B, 2BS, 3B Milw. pl., m.d., d.a.
48"x42"x8" Ingersoll Planer Type.
No. 33 Kempnith Mfg.
No. 21 Brown & Sharpe Automatic.
24", 48" Cincinnati plain & duplex.

DRILLS

3½" Amer. tri. pur., m. d. on arm.
3", 3½", 4", 5" 6" Cin.-Bick. pl. g. b.
4" American Sensitive inclosed head.
D. C. motor on arm.
2½", 3", 3½" Morris plain, g. b.
No. 121, 216, 217, 220, 310, 314,
315, Baker H. D.

D2, D3, D4 Colburn H. D.
No. 26C Fox Multiple.
No. 30 Naisco Multiple.
No. 00S, 1SS Garvin Duplex.
6-spindle No. 2 Avey b. b.
4 & 6 spindle Allen b. b.
1-spindle Avey, No. 3 Morse.

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THE EASTERN MACHINERY CO.

3265 Spring Grove Ave.,

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16", No. 10 & 30", No. 16 Blanchard.	No. 2 Brown & Sharpe.
14" Pratt & Whitney b. b.	12" x 78" Reed Prentice.
No. 2 & 78 Wilmarth & Morman.	30" x 84" Diamond Face.

GEAR CUTTERS

Nos. 15H & 24H G. & E. hobbers.	36" & 48" Brown & Sharpe.
No. 12 Barber-Colman.	64" x 20" Gould & Eberhardt.
16", No. 5A Lees Bradner.	36", No. 6 Fellows shaper.
16" Cincinnati hobber.	No. 2 Bilton automatic.

PRESSES

800 ton Bliss Coining.	No. 3 Consolidated O. B. I.
250 ton Consolidated coining.	No. 6 Adriance O. B. I.
150 ton Ferracut coining.	No. 41 Toledo horning.
48", No. 92C Toledo double crank.	No. 22 Consolidated horning.
82" Ferracut double crank.	No. C82 Ferracut notching.
No. 286 Consolidated cam drawing.	No. P3 Ferracut.
Nos. 64, 65 & 67 Consolidated s. s.	35, 40 & 100 ton hydraulic.
No. 74 Bliss straight side.	Nos. 4 & 5 Greenerd arbor.
No. 5N American Can gap.	40 ton Jarecki die trying.
Nos. 3 & 5 Toledo O. B. I.	200 ton Niles wheel press.

PLAIN MILLERS

Nos. 1AS, 2 B & 3 B Milwaukee.	Nos. 1A, 2 & 3 Brown & Sharpe.
Nos. 1A, 2 & 3 Rockford.	No. 3 Kempsmith.
Nos. 2, 3 & 4 Cincinnati.	No. 6 National Transit.

UNIVERSAL MILLERS

No. 1 Cleveland.	No. 25 Ohio.
No. 1A Valley City.	No. 3 Kempsmith.
No. 2A LeBlond.	No. 3 Brown & Sharpe.

PLANERS

22" x 22" x 4' Powell.	36" x 36" x 8' Gray.
24" x 24" x 6' Woodward & Powell.	36" x 36" x 10' Cincinnati.
30" x 30" x 8' Cleveland openside.	36" x 36" x 12' Woodward & Powell.
30" x 30" x 8' Gray.	36" x 36" x 12' Cincinnati, heavy.
30" x 30" x 12' Cleveland openside.	36" x 42" x 12' Cleveland openside.
32" x 32" x 12' Niles.	72" x 60" x 14' Cleveland openside.

SHAPERS

14" Davis.	24" American.
15" Potter & Johnston.	24" Potter & Johnston.
16" Ohio.	24" Gould & Eberhardt.
16" Smith & Mills.	28" Ohio.
20" Milwaukee.	28" Columbia.
20" Gould & Eberhardt.	32" Walcott.

MISCELLANEOUS

Wicaco oil groove.	1", No. 1 Davis keyseater.
9" x 8" Chicago compressor.	12" x 6" Hendey lathe.
3" Morris radial drill.	8" Oster pipe machine.
No. 5A S. C. & H. furnace.	2A Acme upsetter.
18H & 24H G. & E. hobbers.	34" Betts slotter.
1 ton Mac electric hoist.	No. 27 Matthews marker.

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MILES MACHINERY COMPANY
Saginaw W. S., Mich.

High Grade Machine Tools

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28"x48" Harrington, Sliding Bed.
48"x30" Lodge & Shipley Sel. Grd. Hd.
54"x24" H. S. & G. Grd. Hd. M. D.
24"x22" Bradford, Q. C., 3 S. C. D.
36"x16" Lodge & S. Sel. Grd. Hd.
30"x16" L. & S. Patent Grd. Hd.
30"x14" L. & S., 3 S. C. D., D. B. G.
24"x12" L. & S. Patent Grd. H. S. P. D.
21"x10" LeBlond, Geared Head.
20"x16" American, Geared Head.
16"x8" L. & S., Sel. Grd. Hd., S. P. D.
16"x6" Am. G. H. Tool Rm., S. P. D.
20"x8" Am. Grd. Hd., M. D., late t.
20-30"x7" Monarch Helical G. H. Gap

Grinders

16"x72" Landis Plain, Self Cont.
16"x48" Landis Crankshaft.
No. 4A Landis Special, Auto. Crank.
16"x48" & 72" Landis Crankshaft.
16"x72" Plain Landis.
Type A Production Abrasive Finishing
Nos. 50, 55, 60, 65 and 70 Heads.
6"x18" Landis Plain, Self Contained.
10"x52" Landis Plain, Self Con.
Rivett Internal Grinder.
No. 2 Brown & Sharpe Surface.
Nos. 1½ Cincinnati Tool & Cutter.

Gear Cutters

No. 1 Brown & Sharpe Gear Tester.
No. 615 Fellows.
36BM Gould & E. Gear Rougher.
No. 3, 26" Brown & S. Gear Cutter.
No. 4, 48" Brown & Sharpe.
Nos. 1, 2, 4 Adams Farwell Gear Hb.
18-H Gould & Eberhardt Hobber.
6", 11", 18" Gleason Gear Generators.

Bolt and Pipe Threaders

½" Landis Double-Spindle.
1½" Landis Sgl. Sp., Grd. Hd. m. d.
1" Acme Class "A" Single-Spindle.
2" Landis Sgl. Sp., lead screw attach.
2" Landis Double-Spindle.
18" Landis Pipe Threader.

Boring Mills

24": 36" and 42" Bullard "New Era"
A. C. motor drive.
60" Niles Boring Mill, 2 heads.
No. 32 Giddings & Lewis Horiz.

Milling Machines

48x48x16 Ingersoll 4 hds., Adj. Rail.
No. 3H LeBlond H. D. Univ. C. Dr.
No. 5 Cincinnati High Power, Rectangular Overarm.

No. 4 Cincinnati Pl. Hi-Pwr., S. P. D.
No. 4 Cincinnati H. P. Pl., S. P. D.
No. 3 Cincinnati Pl. Hi-Pwr., S. P. D.
No. 3-B Milwaukee Pl., Dbl. O. A.
Nos. 3; 5-B; 6 Becker Vertical.
No. 2A Brown & S. Univ., S. P. D.
No. 3 Cincinnati Vert. H. P., S. P. D.
Nos. 2 and 3 Cincinnati High Power
Plain, S. P. D. flange nose.
No. 2 Cin. H. P. Rect. O. A. m-i-b.
No. 2 Cincinnati Universal H. P.
flange nose; S. P. D.

5" Pratt & Whitney Automatic.
18" Cincinnati Plain Mfg. Miller.
Briggs Manufacturing Miller.
No. 3 Kemp Smith Univ., Cone Drive.
No. 7-H Becker Lincoln type.
No. 1 Knight Miller and Driller.
6x48 Pratt & Whitney Thread Miller.
4½x12 Pratt & Whitney Thread Miller.
No. 3 & 3-E Lees-B. Thread Millers.

Planers

24"x24"x8" Gray Planer.
36"x36"x10" Gray, 2 heads.

Radial and Upright Drills

2½" Cinti-Bickford Radial, S. P. D.
2½, 3, 3½, 6" Cinci.-Bick. S. P. D.
3, 3½, 4 American Trip Pur. S. P. D.
3" Bickford Plain, S. P. D.
4" Cinti.-Bickford Univ., S. P. D.
6" American Triple Purpose, S. P. D.
No. 2 Colburn Mfg. H. D. 2-spindle.
6-spindle Rockford 20" B. G. P. F.
No. 40 Natco Straight Line Multi.

Shapers

16", 20", 24" G. & E., mtr. dr. thru g.b.
16", 20" and 24" G. & E., cone drive.
20" Steptoe, S. P. D.
24" Potter-Johnson M. D. thru gear box

Miscellaneous

No. 3-B LaPointe Broaching Mche.
80lb. Bradley Cushion Helve Hammer
High Speed Riveting Hammers.
Nos. 1 & 3 Baker Keyseating Mches.
No. 2 Mitts & Merrill Keyseater.
Nos. 1 & 2 Davis Keyseaters.
V-18 Amer. Vert. Broaching Mche.
15, 30 & 50 Ton Lucas Forcing Pr.
56 Adriance Geared Press.
No. 50 Toledo Arch Press, 10" stroke.
No. 2 L. & A. Punch & Shear, M. D.
No. 1 & 2-X Garvin Tapping Mches.
No. 4 W. & S. Univ. Turret Lathe.
100 K. W. Federal Butt Welder.

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No. 0 GIDDINGS & L., 3" bar.
No. 3-A UNIVERSAL, 3" bar.
5" bar, N. B. P. Floor Type.

BORING MILLS (Vert.)

32", 42" KING, M. D.
36", 42" BULLARD "New Era"
61" BULLARD MAXI-MILL.
10' NILES.

DRILLS (b. b.)

2, 3, 4, 6 spdl. LELAND-GIF.
2 & 4 spindle ALLEN.
2 & 6 spindle EDLUND.
4 & 6 spdl. HENRY & WRIGHT

DRILLS (Mfg.)

Nos. 2 & 14 COLBURN, 1, 2, 4 sp.
Nos. D-4, D 5 COLBURN.
Nos. 121 & 217 BAKER, M. D.

DRILLS (Radial)

3' AMER. MAXI-SPEED Sen.
3', 3½', 4' WESTERN.
5' AMERICAN, triple purpose.
6' AMERICAN, full universal.

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Nos. 9-H & 18-H G. & E. Hobber.
Nos. 6, 65, 61, 612 FELLOWS.
Nos. 7, 75, 715 FELLOWS.
6" & 18" GLEASON Bevel Gear.

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No. 1 GREENFIELD Hydraulic.
6"x32" NORTON, M. D.
Nos. 10, 11, 12 BROWN & S.
10"x24", 36" 50" NORTON.
10"x72", 10"x96" NORTON.
10"x20", 36", 52" LANDIS.
14"x36", 14"x72" NORTON.
18"x96" NORTON, M. D.
20"x120" LANDIS, M. D.
28"x96" LANDIS, M. D.

GRINDERS (Univ.)

Nos. 13, 1, 2 BROWN & S.
No. 2 & No. 21 BATH UNIV.
No. 2-A 16"x32" LANDIS M. D.

GRINDERS (Misc.)

Nos. 60 & 70 HEALD Internal
8" ARTER Rotary Surface.
14"x36" PRATT & W. Surface.
No. 51 OLIVER T. D. Grinder.

LATHES (Screw Cutting)

12", 14"x6" L. & S. Sel. Grd. Hd.
16"-18½"x6" AMERICAN, rel. att.
16"x8" HENDEY taper att.
16"-18½"x8", 10" L. & S. Sel. G. H.
18"-20½"x8" AMERICAN G. H.
20"-22½"x8", 12" L. & S. Sel. G. H.
24"-27½"x12", 16" L. & S. Sel. G. H.
36"-40½"x14", 22" L. & S. Sel. G. H.
66"x21", 36" PUTNAM T.G.M.D.

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3½"x36", 60", 108" LO-SWING.
8"x60" FITCHBURG LO-SW.

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No. 1-B MILWAUKEE, mtr. dr.
No. 2-B MILWAUKEE, Tim. d.
No. 2-M CINCINNATI, S. P. D.
Nos. 2 & 3 CINN. H. P., S. P. D.
No. 3-B MILWAUKEE, S. P. D.
Nos. 4 & 5 CINN. H. P., S. P. D.

MILLERS (Univ.)

No. 1½ ROCKFORD.
No. 2 OHIO.
No. 2 BROWN & SHARPE.
No. 2-M CINCINNATI.
Nos. 2, 3, 4 CINN. H. P., S. P. D.

MILLERS (Vert.)

No. 2-M CINCINNATI.
No. 2, No. 4 CINN. H. P., M. D.
No. 3 & No. 5 BROWN & S.
No. 3 CINN. H. P., motor-in-base.
No. 4 CINN. H. P. inter. fds.

MILLERS (Mfg.)

24" CINN. Duplex, S. P. D.
No. 33-36" KEMPSMITH, M.D.
24"x24"x12" INGERSOLL Slab.

MILLERS (Thread)

4½"x12" PRATT & WHITNEY.
6"x14", 6"x48", P. & W. 2" spdl.
6"x48" P. & W. 3" spindle.

PLANERS

24"x24"x6" ROCKFORD.
24"x24"x12" GRAY.
36"x36"x18" CINCINNATI.
36"x36"x24" GRAY.
48"x48"x10" GRAY.
48"x48"x18" PUTNAM.
56"x56"x32" CINCINNATI.
72"x72"x12" CINCINNATI.

PRESSES

No. 20 BLISS.
No. 3 & No. 4 ROCKFORD.
No. 5-A TOLEDO.
No. 63 CONSOLIDATED, S. S.
No. 303 BLISS, S. S.
No. 203-32" TOLEDO.
No. 30-32" CLEVELAND.
No. 173-A CONSOLIDATED.
No. 54½"-55" HAMILTON
H. & W. 50-ton Dieing Machine.

SHAPERS

16" S. & M., s. p. d. auto. lub.
20" STOCKBRIDGE, M. D.
24" GOULD & EBERH'T, s. p. d.
24" CIN. Climax, s. p. d. auto. lub.
28" COLUMBIA, s. p. d.

TURRET LATHES

14"x18" CINN. ACME, Screw.
No. 4-1-9/16" B. & S. Screw.
Nos. 1A & 2A W. & S. Univ. Tur.
Nos. 3A & 4A W. & S. Univ. Tur.
18"-3-9/16" LIBBY, motor drive.
26"-7½" LIBBY, Inter. Turret.
No. 4-L, 9½" GISHOLT Turret.

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Square shear, 8' for 12 gauge steel.
Hydraulic scrap baler not requiring pit.
Double seamer, Niagara No. 6 or equal.

Other machines used for manufacture of 28 ga. caustic soda drums.

BOX 130, c/o HITCHCOCK PUBLISHING CO.
508 S. Dearborn St., Chicago, Ill.

Bullard Mills, 24-36-42-61".
Lathes, 60"x50"—72"x40".
Lathes, 54"x24"—46"x28".
Rolls, 16"x $\frac{5}{8}$ "—12"x $\frac{1}{2}$ ".
Rolls, 25"x1".
Pels No. 22 Comb. P. & S.
Nibblers, 3/16"- $\frac{3}{4}$ "- $\frac{3}{8}$ ".
Slitters, 24"-36"-48".
Forging Machines, 1 $\frac{1}{2}$ "-3"-5".

No. 3 Friction Saw.
24" N. B. P. Slotter, New.
10" P. & W. Die Slotter.
Cleveland Automatic, 6 $\frac{3}{4}$ ".
12" Press Brake $\frac{3}{8}$ ".
6" Press Brake 3/16".
8" Press Brake $\frac{1}{4}$ ".
10" Chicago Apron Brake 3/16".
Ferracute 150-ton Press.

Have a nice lot of good tools to offer.

Percy M. Brotherhood & Son
114-118 Liberty St., New York City

24-36-42" Bullard New Era V. T. L.
8" Bullard Mult-Au-Matic, M. D.
3" Bar Lucas Horiz. Boring Mill.
No. 11 Natco Mult. Spdl. Drill, like new
No. 7 Fellows High Sp., Gear Shaper.
No. 1-2-3 Brown & S. Univ. Grinders.
16" Heald Rotary Surface Grinder.
14" Pratt & W. Surface Grinder, B.B.
3B K. & T. Plain Dbl. Overarm Mill,
Motor-in-base.
No. 4S Cinti. Pl. Mill, slot, nose, M.D.
No. 3S Cin. Univ. Mill pyr. col. m.i.b.

No. 3B K&T Univ. Dble. Overarm
Mill, arranged Motor Drive.
No. 4 Cinti. Univ. Mill, Round overarm.
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10-ton Henry & Wright Dering Mche.
No. 0 Brown & S. High Speed Auto.
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No. 2 Brown & Sharpe.
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14"x72" Norton grinder, fine condition.
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52" m.d.; 96" Niles; #2 Becker vert.

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Keyseater, #2 M. & M.; 32" crimp
mach., m. d.; Rivet hammers, #2
& #3 Grant; #4-A hi-spd.; Tumb-
ling Barrels, Sly (2) 36"x72"; Bead-
ing Machine, Toledo #382; #14
Excel. iron roll; # wire straightener
#4 Langeliers wagger; 16" American
shaper, s. p. d.

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Gray 18" thr., #1A Campbell.

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36" bet.; #92-C 42", 4" str.; #96B,
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Horn, #16 Bliss; #42-A & 59 Toledo;
D25 Pexto. OBI, #1, 2, 4, 5, Am.
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Roller Die Mches., 10 sp. m. d.

Square Shears, Pwr., 8' Stoll, 10 ga.,
Nia. 12' 14'; 52" 18, 52" 10; 8' 3/16"
Nia. 15" gap, m. d.; 8' 16'; 8' 18'; 10'
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NEW 3 Phase Motors—5 h. p. \$55.75

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12"x 5' Cleveland, geared head.
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No. 52, 53 and 55 National Acme.
21" and 24" Gisholt, (motor drive).

18"x 8' American qk. ch., taper att.
24"x14" LeBlond.

capacity Acme.
13/16" capacity Foster (2).

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16" Smith & Mills, motor drive.
16" Ohio back geared, crank.

20" Smith & Mills, back grd. crank.
25" Smith & Mills, back grd. crank.

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No. 2 Bliss Consol. O. B. I., new.
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Emco bench.

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4-spindle Demco bench (new).
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21" Cincinnati-Bickford, T. A.

5' Baush radial.
22", 24", 26" and 32" sliding head.
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24"x20"x8' Ingersoll horizontal, motor
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6"x15" Fitchburg plain.

16"x42" Landis universal.
10"x20" Landis plain.

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Blowers, positive pressure.

Boring mill, No. 3 Colburn.

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MACHINERY Dept. H. COMPANY
COLUMBUS OHIO

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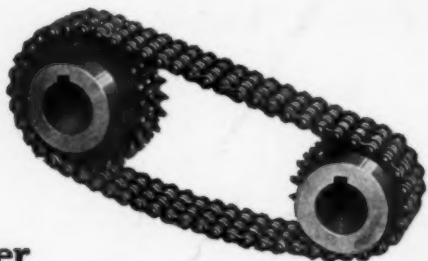
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